

ADVICE
ON THE
CARE OF THE TEETH
BY
D. A. CAMERON.

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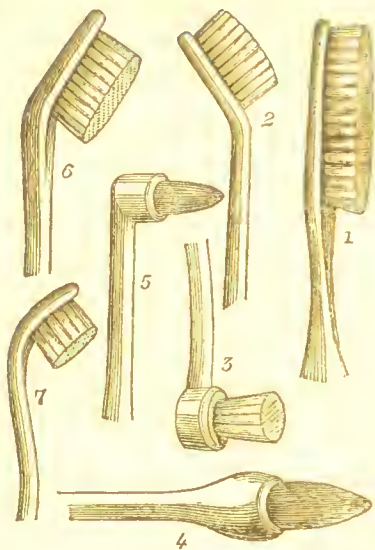
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Various shaped Tooth Brushes, useful for different parts of the Teeth—(See page 66.)

PLAIN ADVICE

ON THE

CARE OF THE TEETH;

WITH A

Popular History of the Dentist's Art,

AND A

CHAPTER TO MOTHERS

ON THE MANAGEMENT OF CHILDREN DURING THE FIRST
DENTITION.

BY D. A. CAMERON,

SURGEON-DENTIST.

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PREFACE.

THOUGH engaged for some years in collecting materials for a detailed as well as scientific work on Dental Surgery and Mechanism, the Author has, in the meanwhile, so far anticipated his plan, by being led to conclude that a publication containing sound advice on the care of the Teeth, and general information on the Dentist's art, apart from all technicalities, would be acceptable both to his Friends and the Public. He is not aware that any work of a similar kind has ever been published in this country. In a popular point of view, the books we have are objectionable,

either as being filled with anatomical and physiological descriptions suited only for the profession, or as containing but little that can substantially benefit the general reader. He has endeavoured to make the following pages interesting and profitable to all, by combining sketches of the teeth, neighbouring parts, and their maladies, with practical advice, and general information concerning the art.

Two difficulties lay in his way: on the one hand, the possibility of treating a simple, familiar, and interesting subject with ridiculous pedantic gravity; on the other, that deficiency of useful information, characteristic of a mere book-maker. By universal consent, the teeth and their affections have always been the ground for *jeux d'esprit*, except to the sufferer at the time. 'Tis, indeed, a laughable subject; and surely we are not the people to grow

lugubrious over the pangs of the dental nerve, or a tooth with a little black spot.

The utility of the work has been increased by information regarding artificial palate, and by advice to mothers on the management proper for children during the first dentition. The former is a very uncommon subject in this country, though extremely interesting to many; and the latter cannot fail to command some measure of maternal favour and attention.

The great improvement so lately accomplished in the manufacture of mineral teeth, by Mr. Ash, London, whereby they exactly resemble natural teeth in shape, shade, and translucency, is merely adverted to here, as no proper opportunity of noticing it was left us in the course of the work. Whether the improvement be as useful as beautiful, remains to be tried.

The Author will, perhaps, be allowed the conclusion, that fifteen years' application to his profession, one way and another, qualifies him to form some opinion of its merits, and to point out what is really useful to be known regarding it. On a few topics information may be found not easily collected by the Public. Nothing would give him greater pleasure than to find that his labours were deserving of unbiassed approbation.

GEORGE SQUARE, GLASGOW,)
1838.)

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CHAPTER I.

The Teeth.

A FEW GENERAL REMARKS.

ONE of the noblest objects in nature is a well formed human head, with the accompaniment of an intelligent countenance. This does not require features formed upon strictly regular principles, nor unexceptionably beautiful; but only to be good and pleasing of their kind. Good features, a smooth skin, not necessarily of dazzling fairness, clear sparkling eyes, as they always will be in health, and when a smile dimples the cheeks and parts the lips, the display of clean white teeth, with the rest of the mouth of a deep crimson;—these are necessary, whilst over the whole should be thrown that nameless magic expression which is the result of cultivated intellect. refined

feelings, and only belonging to the highest order of mortals.

Beauty alone is but of little worth,
But when the soul and body's of a piece,
Both shine alike ; then they obtain a price,
And are a fit reward for gallant actions.

SHAKESPEARE.

Common politeness, a desire to give as well as to receive pleasure in the intercourse of life, with a reasonable deference to the usages of society, demand that we should apply every assistance of taste to further the advantages Nature has bestowed, and that, above all things, we should pay rigid attention to personal cleanliness. On this point, one of our early and most popular essayists remarks, in one of his graphic papers, that "cleanliness is next to godliness." Purity of mind is, indeed, godliness, and cleanliness of body might seem, therefore, a very natural part of it. Whilst directly contributing to health, it has an essential tendency to refine our sentiments, and to administer to the comfort

of those about us. In the progress of improvement, it really comes to form no triding item of social benevolence, and the want of it must be attributed either to ignorance or disregard of the usages and habits of the refined portion of the community. Its effect is so agreeable, and the opposite of it, in any particular of the personal economy, so repugnant, that where the means of cleansing and aids for the toilette are so abundant and cheap, there is scarcely an apology for those appearing in society without being scrupulously clean both in person and dress.

It would seem imperative on each, for his own comfort, at least, not to neglect any precaution appertaining thereunto; yet, careless people there are in all classes, who offend more or less in this respect. A shrewd writer observes in a homely way—"Some garnish only the outside: they wash their hands and face, dress their hair, put on fine clothes, but neglect the rest of the body. A thoroughly well-bred person is as careful to cleanse his

whole body as his hands and face." The most general point of defection in the personal economy, is the mouth and teeth. This is nothing new, however. It has been so in other times, as well as our own, and the offenders have fallen under the lash of authors, both moral and satirical, of bygone years. Horace, the prince of the ancient satirists, reminds the Roman ladies of the clownishness and inelegance of black teeth; Chesterfield sets down a dirty mouth as a certain mark of bad manners; and the pious Lavater, in his entertaining Physiognomy, declares, that an epitome of the moral character may be drawn from the sight of the teeth, and that, consequently, when these are foul, the possessor must be a person of vulgar sentiments.

On the other hand, teeth beautiful by Nature's gift, or one's own care, have always received the poet's warmest praise, and the cordial approval of every man of taste. That interesting and gorgeous allegory contained in the Sacred Book, styled the Song of Songs,

affords at the same time in the fascinating language of an Eastern, the opinion of the poet, philosopher, and leader of a court, regarding the aid lent by a lovely denture to personal grace. In the chronicle of the "Spouse's" charms, the white, regular, and shining row of unblemished teeth, illustrated by one of the most pleasing objects in nature, is chosen as an appropriate symbol of moral excellence.

But a desire to please, a wish to escape remark, and a regard to personal comfort, are not the only motives that should weigh with us, to induce particular attention to the state of the teeth. The continuance of bodily health is influenced in a very material degree by the condition of these organs; and, further, the essential antidote to their premature decay, as well as to that most tormenting of mortal maladies—the toothache—consists in early and constant attention to cleanliness of the mouth.

CHAPTER II.

The Teeth.

THEIR NATURE, HISTORY, AND USES.

THE teeth form the very commencement of that complicated machinery for the nourishment of the body, called the alimentary canal. They are the hardest and whitest of our bones; and, at full maturity, the mouth usually contains thirty-two. Some individuals, however, have not so many; but the number is, generally, not less than twenty-eight; which are divided into front and back, or cutting and grinding teeth. Their names are familiar to every one. Each tooth is divided by the anatomist into two parts, viz. the crown, or that part which is visible in the mouth, and the root, which is fixed into a socket in the jaw bone, and out of sight.

The large grinders of the lower jaw have two roots, and those of the upper, three. The crown is covered with a beautiful enamel, which is a crystalline substance, and peculiar to the teeth. This enamel is thickest on the cutting edges and points of the teeth, and on their sides next the tongue and lips. Exactly at the edge of the festoon of the gums, and where the enamel ends in a thin scale, there is a narrow circular depression, which has been fancied the boundary between the crown and the root, and styled the neck of the tooth. It is in the course of this depression, especially in that part between the teeth, that caries of the ten teeth to the front most frequently takes place.

The teeth do not grow like the other bones, and it is disputed whether they be nourished in the same manner. In the dawn of life small soft bodies, made up chiefly of blood vessels and nerves, and enclosed in bags containing a limpid fluid, are prepared in the jaw. These bodies first deposit on themselves

the cutting edges or grinding points of the bony part of the teeth, resembling, at this stage, the mushroom on its stalk, and proceed in this way layer by layer, until the whole of each tooth, both crown and root, is filled up. When the crown has grown, the enamel is deposited upon it by the inner surface of the bags, containing the small pulpy bodies, where it is prepared. Should there be any imperfection or severe disease in the inner surface of this membrane, the enamel will be unequally formed, and the teeth have at length that dotted or bare appearance we so often see. Persons ignorant of this physiological fact are alarmed when they observe the teeth in the mouth to have this appearance, and anxiously ask whether any thing can be done for them. The only remedy is to smooth the teeth by means of a file and pumice stone, and to keep them extremely clean.

On examining the tooth of a grown person, it is found to have a narrow internal cavity, which, beginning by a small opening at the

point of the root, becomes gradually larger, and terminates in the crown. The blood vessels and nerves that have formed and nourished the tooth, but much smaller, are lodged in this cavity, and, passing out from it to join their respective branches in the head, thereby vitally connect the tooth with the body. It is the inflammation of these nerves and blood-vessels within this narrow cavity, where they cannot expand, that creates the excruciating agony of toothache; and that severe pain which is sometimes felt when the dentist ingrafts a pivotted crown on the root of a former tooth. This cavity gets filled up in the course of time; consequently, the teeth of old people are quite solid.

That part of the jaw in which a tooth is fixed, is called its socket. The socket and the root of the tooth are clothed with a thin vascular membrane, which seems also to form the outer covering of the gum. This membrane is frequently the seat of intolerable pain, and offensive abscesses. Since the teeth,

jaws, and gums are so intimately connected, it is easy to understand how disease of one part may involve the whole. By the wasting of the sockets, either from repeated attacks of inflammation or the protracted use of calomel, and by the shrinking away of the gums, the teeth loosen and ultimately drop out. From the numerous cases we have seen, the loss of teeth from this cause, even in early life, must now be very frequent.

The gums we consider wholly subservient to the teeth. They protect that part of the jaw appropriated to the teeth, and are ornamental to the dentary circle; besides, being firm and elastic, they break the jar, and carry off the noise, made by the teeth knocking against each other in mastication. The colour of the gums in health is a uniform pale rose, and little sensibility belongs to them, unless diseased. As firm and healthy gums support and fasten the teeth; so, on the contrary, when inflamed, swelled, and soft, they part from them, by which the latter get loose. After

the teeth have dropped out, the gums shrink away, and serve as a mere covering to that part of the jaw which remains. Except some kinds of inflammation, and excrescence, all diseases of the gums are only symptomatic of a bad condition of the teeth and jaws, or of the digestive organs.

Every one knows there are two sets of teeth; one suited for the simple diet of the child, the other for the after periods of life. Hence, the first is called the milk, or temporary set, and the second, the adult, or permanent. Between the sixth and eighth month after birth, the first of the milk set pierce through the gums, and in two years and a half after this, the whole, twenty in number, are ranged in the mouth. The temporary teeth are very apt to spoil, especially if the child be feeble, eat too many sweets, be overfed, or take little exercise; but to remedy this as far as possible, the child, besides having the gums rubbed daily with sub-carbonate of soda, should have plain diet, take very small tonic powders of

one part of quinine and two parts of rhubarb, or be much in the open air, as the case may require. According to an ordinary law, the milk teeth waste away or fall out about the sixth year, and are succeeded one by one, or pair by pair, in their natural order, by their respective substitutes of the adult set. But previous to the shedding of any of the temporary set, the first of the permanent teeth, which are the first large grinders, take up their position in the month behind the last of the former set. Few persons are aware of the exact order in which the different sorts of the second set come into the dentary circle, and of course are stupidly passive, in a matter that ought to be quite familiar, to whatever the ignorance and cupidity of the uneducated dentist, whom they consult, may dictate on the occasion. Here a question may very properly be asked. Why do we meet with so many *buck-teeth* in the children of the wealthy class, who are so attentive to the management of the dentition, whilst there are

so few in those of the humble class, who seldom have recourse to the profession in this way, but trust to the care of kind Nature? A learned professor once said of persons ever ready to swallow drugs: "*Que les medecins sont plus nécessaires aujourd' hui pour les defendre que pour les ordonner;*" and the same may now be said of dentists always inclined to pull out the temporary teeth on the slightest pretext. "Many young persons who have had the second dentition managed in this way, after enduring the extraaction of the twenty temporary teeth, often whilst firm in the jaw,—extraaction that is to assist the arrangement of the permanent,—have at length found themselves deprived of four eye-teeth, which are the strongest and might have lasted during the whole of life, as we may notice in a great number of old people, with whom they remain after every other has dropped out." Those who thus conduct the dentition fall into the embarrassment they wished to escape; for their intention was to prevent *buck-teeth*,

which is the precise result of their operations. The following tables will show not only the natural order, and the time, of the teeth taking their place in the dentary circle, but also the most frequent deviations from it. They are drawn up by M. Delabarre, surgeon-dentist to the late king of France, whose extensive experience in the Orphans' Hospital and otherwise entitle him to the highest respect.

THE NATURAL ORDER IN WHICH THE TEETH ARE RANGED
IN THE DENTARY CIRCLE.

Natural Order.



1. The four first large grinders and the two under middle cutting teeth, from 6 to 8 years.
The two upper middle cutting teeth, — 7 — 9 —
2. The four lateral cutting teeth, — 3 10 —

3. The four first little grinders, — 9—11 years.
4. The four eye or canine teeth, — 10—12 —
5. The four second little grinders, — 11—13 —
6. The four second large grinders, — 12—14 —
7. The four wisdom teeth, — 18—24 —

This table, in which the teeth both of the under and upper jaw are included, points out that the teeth protrude first in the under, and also the time when they appear. The diagram exhibits the order of dentition in the under jaw, but the explanation for one serves equally for the other.

THE FIRST DEVIATION FROM THE ABOVE ORDER, SHOWN
IN THE FOLLOWING PARTICULARS:

- The four eye or canine teeth, from 9 to 11 years.
 The four first little grinders, — 10—12 —
 The four second little grinders, — 11—13 —

First.



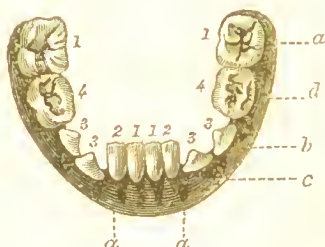
a. a. a. The central and lateral cutting teeth, and the first large grinders of permanent set.

- b.* The anterior grinders of milk, or temporary set.
- c.* The eye-teeth of permanent set.
- d.* The posterior grinders of milk set.

THE SECOND DEVIATION CONSISTS IN

The four little grinders, and the eye-teeth coming at the same time.

.. *Second.*

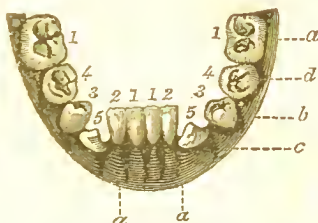


- a, a, a.* The central and lateral cutting teeth, and the first large grinders of permanent set.
- b.* The first little grinders of permanent set appearing above the gum.
- c.* The eye-teeth of permanent set, also appearing above the gum at the same time.
- d.* The posterior grinders of milk set.

THE THIRD DEVIATION.

The four first little grinders,.....from 9 to 11 years.
 The four second little grinders,..... — 10—12 —
 The four eye, or canine teeth,..... — 11—13 —

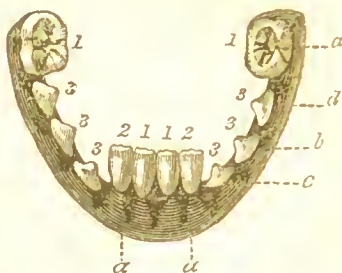
Third.



- a, a, a.* The central and lateral cutting teeth, and the first large grinders of permanent set.
- b.* The first little grinders of permanent set, fully in place.
- c.* The eye-teeth of permanent set just appearing above the gum, whilst:
- d.* The second little grinders of permanent set are also fully in place.

THE FOURTH DEVIATION.

The four first little grinders, and the eye-teeth, and the second little grinders, come at the same time.

Fourth.

a, a, a. The central and lateral cutting teeth, and the first large grinders of permanent set.

b The first little grinders,

c The eye-teeth, and

d The second little grinders of permanent set, all appearing above the gum, and advancing at the same time.

We venture to issue the dictum, in this age of miserable teeth, that on the good management of the second teething depends the beauty of the adult denture, and its easy toilette. People are fanciful as to what constitutes a beautiful denture, yet teeth tolerably well set, and perfectly clean, all can admire. Perhaps we cannot more forcibly recommend

and eulogize a charming denture, than by referring to *that sensation* created by the sight of irregular and badly kept teeth. Even the rude savage in different parts of the world marks his importance of the teeth, and their toilette, to personal beauty and advantage ; some by staining them black with various preparations, some by shaping their cutting edges into spear points, others by making them short and thick, and others by drawing out one so as to speak according to their fashionable manner. But still, however great the rage for novelty in Britain and on the Continent, few dentists, we presume, would venture to introduce *cettes modes bizarres*. The well-bred portion of every civilized community have not only applauded the teeth beautiful by Nature's art, and considered the tooth brush indispensable ; but from the effects of luxury and refinement on the constitution, have found attention to the whole mouth particularly necessary for the perfection and preservation of these organs. Than the teeth, in

their structure and adaptation, no organ is more strikingly impressed with marks of supernal goodness and intelligence. Notwithstanding the evils common to them, yet their mechanism is most admirable, and no effort of human wit has ever been able to improve upon it, even in imagination. In the most beautiful denture least apt to decay, the teeth are well ranged, of middling size, pure white, and stand slightly apart. A denture of this sort is more easily brushed, and kept more thoroughly clean. Decay will soon occur in the teeth which are very close, both from their pressure together, and rubbing on each other at the side, in the constant act of mastication. Some suppose, that as nutrition is supplied to the teeth like the other organs of the body, those which are too close set spoil at the points where it is interrupted by pressure. There is a very absurd popular fancy, that the teeth infect each other. When the denture is not quite regular, or, when well formed, the teeth as it were crush together, one or more of the

back teeth ought to be removed, or the teeth filed between, in order to perfect the beauty of it, and to obtain that freedom from pressure necessary for their preservation. Should the cutting teeth of either jaw be thought too long, they may be freely filed, as they scarcely ever decay at their cutting edges.

Some writers on dental subjects have been at much pains to explain mastication to us, and, as the public may be thought sufficiently enlightened on this familiar matter, we have, unfortunately for the number of our pages, only to observe, that the chief use of the teeth is to prepare the solid materials of our food for the stomach, by bruising and mixing them with the salivary juice. Nature, ever kind! has suited the teeth of man for every kind of food, whether vegetable or animal, and by their structure, for every change of climate. We hazard the hypothesis, that Nature never intended the mouth should be unfurnished with teeth, and although the instances are rare of the teeth continuing perfect to the

close of life in protracted age, yet there are such instances; and, perhaps, it is not saying too much, if we further advance, that under proper treatment they might be found as enduring as any of our other bones. The pathology of the teeth, and their essential use in the functions of the living system, though of so much importance in their consequences to the individual, have not hitherto occupied so prominent a place in the researches of science as they deserve, and, we trust, will yet obtain. At the same time there are many pretenders to this knowledge, who take handsome fees for doing a tolerable amount of mischief. Mastication sufficiently prolonged renders digestion more quick and easy; but, on the other hand, individuals who swallow their food with very little chewing, have almost invariably bad digestion. And since our nourishment so much depends upon the agency of the teeth, it is of the utmost consequence that they be in a sound and healthy condition;—whole, in order to perform

their functions sufficiently ;—clean, that they may not mingle foreign and unwholesome matter with our food ;—and free from caries, that our meals may not be interrupted by pain, arising from the heat and pressure of the food into the tender parts. As we often know things only by comparison, the awkward, tedious, and inefficient masticatory efforts of an edentulous person give a favourable impression of our obligations to a good set of these organs.

The teeth serve a secondary purpose, by assisting in the articulation of the voice ; and if any vacancy occur in the front of the mouth by the depredation of time or disease, the pronunciation of words is seriously impaired, and the harmony of the voice broken. It is evidently out of the power of any one to pronounce the dental letters of a language whilst the front teeth are imperfect or wanting. Players on wind instruments find the fore-teeth of essential service ; and by the flute-player, *par excellence*, they are indispen-

sably necessary to form a good *embouchûre*. Frederic the Great was a fine amateur performer on the flute until he lost his teeth, but, finding the change so great, laid aside the instrument.

A fine mouth, displaying a lovely denture, is one of the best features of the human countenance, and required, according to our ideas, to compose the *tout ensemble* of personal beauty. By loss of the teeth the contour of the face is destroyed; and what a deduction from beauty's claims are gaps in the denture, or teeth allied to blackness and decay!

CHAPTER III.

The Teeth.

CLEANLINESS AND PRESERVATION OF THE TEETH.

CONSIDER how conspicuous and pleasing an ornament the teeth are to the face. A well-formed and well-kept denture makes a principal part of beauty's toilette, gives grace to the orator's lips, and always has an agreeable effect in our daily intercourse. For this end it is required, as we said previously, to be suited in size to the other features, well arranged, white, and perfectly clean. The first requisite is generally supplied by Nature; care and attention in early life will assist the second; and the last is within every person's own power. So many imperative reasons combining, in the present state of society, to

render the preservation and good order of the teeth of the first importance, it is impossible to give the subject too much study and attention. To attempt to set forth all the advantages of the careful toilette of the teeth, would only be to amuse one's self. We should, in this matter, take, on every requisite occasion, the opinion of the physician, as well as the assistance of the regular and experienced dentist, whilst we may at all times discard the specious, but pernicious, reasonings and nostrums of the empiric.

Proper care of the teeth requires they should be effectually brushed every morning with some tooth-powder or lotion, and well washed after every meal with water, which may be slightly warmed in cold weather. If the hurry of business prevents so much attention, they should at least be brushed with a lotion before dinner, besides the cleansing they get in the morning. So many causes contribute to occasion disease of the teeth, and their dependencies, and to alter their healthy condition, that

we ought always to be attentive to the means of keeping them sound. In every period of life we should take care of the teeth, for experience proves that daily purification is their best preservative. Though we would not go so far as to assert that lodgement of food about the necks of the teeth, and in the indentations natural to their grinding surfaces, is the actual cause of decay; yet, there it stagnates, and pollutes the breath. To this cause, perhaps, offensive breath may really be oftenest ascribed. Where many spoiled teeth are, it is almost impossible, with every sort of care, to keep the breath sweet; and one hollow tooth is enough to spoil the whole mouth. We quote, with much pleasure, on the present occasion, from a high authority: "There are some persons who affect carelessness for the preservation of these precious organs, and who, despising not only the assistance of art, withhold the attention which decency requires: yet, the ornaments they so vainly display, are they worth a fresh and well-kept mouth? and

can themselves hope to redeem, by the splendour of their toilette, the disgust that a disagreeable breath excites?"

Commonly, the temporary teeth require no cleansing, unless affected with caries, and, in this case, let them be brushed often to prevent its progress. At seven or eight years, children should begin to rub their teeth two or three times a-week with a soft brush and simple water. Such precautions will not only prevent caries, and improve the jaws, but keep the whole mouth proper. When no care is taken of the teeth of children, a green semi-circle frequently forms on those of the upper denture, close to the festoon of the gums. This, which is nothing else but decomposition of the enamel by some obscure acid resting on the part, should be carefully polished off by a cloth holding a little prepared chalk or powdered pumice. Sometimes the presence of children is quite insupportable, by many of their first teeth decaying at once, and by the gums being very much inflamed, from many of

the second set pressing forward at the same time. To rinse the mouth well with diluted port wine, or weak solution of subcarbonate of soda, and to take tonic powders internally, will do much good in this case. We should decidedly disapprove applying what the dentist calls "scaling instruments," for the removal of tartar from children's teeth, as this can be done by other safe and gentle means.

'Tis time for young people, from fifteen to twenty years, to begin the use of those powders and lotions that have been decorated with the name of dentifrices. The first property of a tooth-powder is to cleanse the teeth thoroughly without injuring the enamel, to strengthen the gums, to give freshness to the mouth, and in its composition to please besides, the sight, smell, and taste. Lotions are substitutes for powders, whose primary effect is to constrict the gums, and make them firm around the teeth, to soothe pain, to heal excoriations of the lining membrane of the mouth, and so forth. For general use, a moderately hard

brush is the best. Take a soft one when the gums are very tender ; but a hard one when the gums, though healthy, incline to grow protuberant, or when the teeth require to be freed from dark spots. Should the gums bleed, do not desist from the use of the brush ; only exercise it more gently ; bleeding here is frequently a symptom that the gums are out of order. We object to the method some have of only rubbing the teeth and gums with a sponge or cloth ; for though the prominent parts of the teeth be polished, yet the interstices and hollows are never reached. Our own experience warrants us to observe, that the gums are apt to get relaxed, tumid, and tender, by such a method. Brushing in every direction is the only effectual means of reaching every part of the teeth, and of keeping the gums healthy.

Experience shows that the finest and most durable teeth are met with in those brought up in such a way as to have the best constitutions and health. Simple diet, much exercise

in the open air, natural hours of rest, dry and well-aired dwellings, all contribute to the perfection of the teeth. It is always remarked, that the inhabitants of dry, or mountainous countries, who live temperately, and otherwise lead a hardy life, have sound and beautiful teeth ; whilst those of low and humid countries, especially when much engaged at sedentary employments, are subject to all the unfortunate affections of these organs. Teeth apt to spoil, and drop out, is often a hereditary affection, and the children of delicate parents find in their denture abundant traces of this in the course of life. These various topics unite to render precautionary measures for the conservation of the denture more necessary in a country like ours.

Never use your teeth in place of seissors to cut thread, tape, silk, &c. ; you cannot perform the operation satisfactorily, whilst, by wearing the enamel, and loosening the teeth which come thus forcibly into contact, you do them considerable injury.

To cracking nuts, and so on, these objections equally apply.

We have seen heavy weights lifted and carried by the teeth, but always shuddered at the consequences incurred by such feats of strength and daring to the whole economy of the jaws.

Young people occasionally take a fancy to swing themselves, holding by the teeth, to the imminent hazard of fracture of the teeth, at least.

Leave it to waiters at inns, and all this sort of people, to make cork-drawers of their teeth.

Carefully eschew gold and silver tooth-picks.

None but the insane will permit a pin, a pen-knife, or a fork, to approach the teeth, as injury of the enamel is the certain consequence.

If a tooth-pick be necessary, a piece of cane or wood cut to a fine point, is one of the safest description, and will reach the

minutest crevices in and among the teeth. Neat tooth-picks of orange-tree wood are sold by respectable perfumers of the metropolis. A quill cut like a pen is used by many persons, but it often has the effect of irritating the gums.

But the best method to free the teeth from any remains of food, is to brush and rinse them well with water after each meal.

Well-informed professional writers on the continent consider the habitual use of hot aliments and liquids as a general and mischievous source of evil to the masticatory organs. From the formation of the teeth, it is natural to suppose that the very frequent application of heat must relax their fibres, and make them more susceptible of the causes of decay.

An acid sufficient to set the teeth on edge should not be applied on any pretext whatsoever, because the earthy part of their substance is thereby dissolved out. All dentifrices containing an acid are deleterious, and should be rejected.

OF THE GUMS.

Since the gums, when healthy, give beauty and solidity to the denture, and since their opposite condition not only undermines the permanency of the teeth, but pollutes the whole mouth, they must participate in all the care bestowed on those organs. Tooth powder, besides cleansing and beautifying the denture, should always possess some tonic property for the gums. The constant use of much spirituous and stimulant lotion, cannot be good either for the gums or teeth. The conservative means are limited, when the gums are tumid, livid, and apt to bleed, to stimulating them in the morning with an aromatic tincture, such as kino, catechu, bark, myrrh; and to the application of a mild metallic astringent, such as solution of sulphate of zinc, when their debility and tenderness is purely local. If, on the contrary, their relaxation depend on a general cause, we must have recourse to internal treatment. They

have few diseases peculiar to themselves, and when the teeth continue perfectly sound, are seldom in bad condition. If at any time, however, they inflame, swell up, and appear to form gum-boil, foment them with decoction of camomile flowers, and at length puncture the abscess. By this method the gums will soon be restored to health. We have frequently had an opportunity of noticing an insidious disease that slowly establishes itself in the mouth, and, causing the teeth to drop out as in old age, makes a complete wreck of the denture even in early life. It is an obscure inflammation of the mucous covering of the gums, which, by degrees, involves the lining membrane both of the teeth and their sockets. The gums grow tender and loosen from the denture, and purulent matter flows down by the necks of the teeth. Should the disease become chronic, that part of the jaw appropriated to the denture wastes away, the gums recede, and the teeth fall out. You may remedy this by washing the mouth often with

emollient drinks, slightly acidulated with lemon juice; by taking care of cold, and avoiding every sort of stimulant. Let this plan be followed up by using every morning a tonic and anodyne tooth powder, compounded of starch, Florentine iris, quinine, and a sprinkling of hyoseyamus; and by *softly brushing the gums* twice a-day with a lotion made of a few drops of the four grains to the ounce *solution in water* of nitrate of silver, which is a standard collyrium with oculists for strengthening the eyes. The solution may be had of any apothecary. In all serious affections of the gums, the shortest way to their conservation is the advice of the physician or dentist.

OF THE TARTAR.

Some would have us to believe that the tartar is a natural secretion of the gums; some, that it is the result of diseased action in their mucous covering; and others, that it is deposited in the mouth by insects, as coral islands are in the sea. Simple as is this

substance, no satisfactory explanation of its origin has yet been given. But, from all appearances, we shall consider it a casual deposit from the saliva, which holds its different parts in solution. It is usually found most upon the teeth near where the salivary glands pour out the peculiar fluid that moistens the mouth. We know not of what use it can be as a deposit. Its presence is injurious to the teeth and gums, and an accumulation of it only renders the mouth abominable. Teeth surrounded by tartar in any quantity is a mark of negligence and want of taste in the economy of the teeth and gums. It first settles on the teeth in the form of mucus, and grows harder by time. When examined, it is found to consist of dried saliva, hardened by its own earthy materials. In some persons tartar is much more abundant than in others; for while some are scarcely at all annoyed by this deposit, nothing but unremitting attention will protect the teeth of others from being covered with it. In masticating food, both sides of the

jaws ought to be equally used, for when one only is put in motion, the inactive teeth are liable to accumulate tartar. While this material remains soft, it has a yellowish appearance, but as it hardens, changes to a dark brown. If this formation be allowed to accumulate, the teeth lose all their beauty to the eye, the gums inflame and separate from the denture, the teeth get loose, and the breath is loaded with a disagreeable fœtor, from the decomposition of such a mass of animal matter. Wherever there is a tendency to calcareous deposit, we must insist on more than usual attention to the means of cleansing and preserving the teeth. Should the tartar have been allowed to grow hard and to stick fast to the teeth, scaling by the dentist is required for its removal. Many persons object to this operation, but the prejudice owes its existence chiefly to the unskilful practice of some operators. “All acids,” says the celebrated John Hunter, “gritty powders, and injudicious methods of scaling the teeth, are

prejudicial ; but simply scaling the teeth, that is, clearing them of the stony concretions which frequently collect about their necks, while nothing is scraped off but that adventitious substance, is proper and useful.”

CHAPTER IV.

The Teeth.

PRACTICAL OBSERVATIONS ON TOOTH POWDER, &c.

THOUGH rubbing the teeth with a brush dipped in simple water, is often sufficient to preserve the natural whiteness and lustre of these organs, yet, there are people who, either from the nature of their constitution, or from negligence, require more energetic means. Hence, the origin of the prodigious catalogue of substances recommended for cleaning the teeth, styled dentifrices. By far too little attention is paid by medical practitioners to the composition of tooth powder; the management of this affair being left to pretenders, generally speaking, utterly ignorant of what they practise. 'Tis to the former alone,

from their course of study and observation, that the public can look with safety in any matter relating to the soundness of our organs, and the health of the system. A good dentifrice may be made of two or three well selected substances ; but nothing displays more ignorance and quackery than the unmeaning *mélange* of several powders to form one for the purpose of giving it an extraordinary name.

When remedies for all mortal ailments are so diligently sought after in general practice, and their application so strictly scrutinized, it is strange that such little attention is bestowed on those for the teeth, now becoming, from the various habits of a luxurious state of society, so prone to decay. Even dentists respectable for their qualifications, and the manner in which they conduct their practice, by no means weigh this matter as they ought. Surely they cannot mean our teeth should run to waste: *their business*, they say, is to preserve these beautiful organs. Notwithstanding we know of dentists, lee-

turers on dental surgery and members of royal colleges, who recommend prepared chalk and camphor or orrice root as a tooth powder in all cases. On what principle are such tooth powders always to be used? Their virtue is, first, to polish the teeth by friction, and second, to neutralize acids, which are two very good properties; but constant friction by a mineral powder, turns out to be a very bad thing, for it wears off the enamel too soon, and thus the mere neutralizing of acidity is dearly bought. The powders prepared by an experienced dentist, should afford some better guarantee than those invented by perfumers, apothecaries, and others, not having the same opportunity of observing their effects. Were we to view the teeth as mere mechanical bodies having no relation to neighbouring parts, and exposed to simple decomposition from an acid, these prescriptions might do very well. The teeth must really be viewed as much more complicated, before any thing can be done appropriately for them. Without affect-

ing to afford proofs of the vascularity of the teeth, on which their vitality is thought to depend; we may say the teeth are vital, and, consequently, subject to many changes, not only from what they are in themselves, but also from their relation to the jaws, to the gums, and to the juices of the mouth. In short, we must have several tooth powders to suit the different cases. To prescribe only one dentifrice, however good in itself, but yet not general in its nature, is, if not empiricism, at least very great negligence towards the masticators of the public.

Meanwhile, supposing the necessity for various compositions of tooth powder, we shall take upon us to arrange these for ordinary use. In thus classing tooth powders, it is impossible to prepare and provide one for every particular case; but yet we may, guided by study and observation, do a great deal by some simple arrangement for the public advantage, as respects the preservation and beauty of the denture. We have observed, in the course

of many years' practice, three unnatural or diseased states of the mouth on which loss of the teeth chiefly depends. These are, first, the accumulation of tartar; second, superficial or slight inflammation of the gums and jaws; third, decomposition of the teeth by an acid. They are particularly obvious in those of the wealthier classes who take little care of their teeth, and in all of the poorer ranks much engaged at in-door occupations. They appear to be endemic in sea-port towns; where the last is widely prevalent, and commits great ravages, especially among the ladies. Let it not be understood, however, that we suppose these to be the only diseased conditions of the denture and neighbouring parts. The good fortune of the dentist, we regret to say, in our sympathy for the public, is much greater than these amount to. We are well aware of other diseases of these parts, acute and very serious: but, then, they are beyond a tooth powder's properties, and require surgical and mechanical operations.

Our arrangement would be, therefore, into Mixed, Vegetable, and Mineral, Tooth Powder; which we adopt, because we should be regulated by their relative importance, which we consider to be in proportion to the number of cases requiring them.

MIXED TOOTH POWDER.

The best composition of this kind is the following. Suppose the principal ingredients to consist of twelve parts :

Fine powder of Prepared Chalk,	4	Parts.
—— Pure Starch,	4	—
—— Myrrh,.....	3	—
—— Ginger,.....	1	—
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	12	—
—— Flowers of Lavender, and of		
Refined Sugar, at pleasure.		

Mix them well together. Here the ginger and myrrh are in such quantity as to be merely perceptible to the taste. The starch, which is the fine farina of wheat, subdivides the chalk, that feels clayey when alone. The

sugar obviates any bitterness, and renders the powder pleasant. The lavender is aromatic, and for perfume. This composition is intended, comparatively, for general use.

In order to understand the usefulness of this dentifrice, we must consider the condition of the teeth and their dependencies, for which it is prepared. Every one's teeth are subject to have deposited on them a calcareous material, which we have already described under the common name tartar. Where it grows large, the gums get red, swell, and are painful. These symptoms are constantly present, more or less, when the teeth are neglected, and occasionally increase very much. Naturally, the gums and the teeth at the neck, are very firmly united by a common membrane, but the inflammation and suppuration following from tartar destroy this union. The tartar, burrowing under the gum, at length seriously affects the jaws. The membrane, common to them with the teeth and the gums, partakes of the usual effects of

inflammation, and the teeth begin to get loose. But this is not all: the jaws undergo that absorption, or wasting, which happens to the bones from simple pressure, and the teeth become looser and looser. The result of the whole is, the teeth either drop out prematurely, or have to be pulled out from the pain they give both in eating and speaking. We have met with very many instances of this, and with some where the teeth had to be removed at a very early age. The following is one:—

A young woman from the country, in good health, and about sixteen years of age, called one day, and, holding in her hand the two central cutting teeth of the lower jaw, stated she wished to have them reset artificially, as she felt the loss of them very much. The two teeth had a little tartar around their neck, which for two years caused so much inflammation, suppuration, and, ultimately, so much annoyance, that she willingly had them extracted by a surgeon. He, no doubt,

acted injudiciously in this case. Thus, by negligence on the one hand, and injudicious management on the other, this poor girl is subjected to what she can very ill afford, the expense of wearing artificial teeth.

Of what use might the mixed powder be in the above-mentioned condition of the denture and its dependencies? Careful friction in all parts of the denture, by means of the prepared chalk, which forms the mineral part of the composition, prevents the accumulation of tartar, and wears it away wherever it has been deposited. As we recommend the powder to be applied with a hard brush, the friction is so severe as to make the gums discharge their superabundant blood. The myrrh contracts the gums to their natural size, whereby the teeth are fastened, as far as depending on them, and the ginger, combining with the aromatic property of the myrrh, stimulates the parts to renewed action, and counteracts debility. The jaws share in the good effects of the whole.

In this way the teeth and neighbouring parts are kept clean and healthy. Cleanliness, independently of all considerations from disease and loss of teeth, demands the use of such a dentifrice. Should the tartar have grown so large and hard in any case as not to be removed by the brush and powder, the dentist must operate for its removal. Much may be done by all these means in very bad cases, for the health of the gums and preservation of the teeth. We beg to give an instance in point.

Mr. —, an old gentleman, waited on us, to get done what lay within the power of the dentist, for his teeth and gums, as he was most uncomfortable. From deposit of tartar, inflammation, and suppuration, his mouth was literally offensive. His teeth, to describe by a simile, moved about in his mouth like a bundle of reeds in the wind. At first examination of the case, the best plan seemed to be to take out a very great many of the loose teeth; but this being rather too serious

a matter, all his teeth were gently and carefully sealed, the mixed powder prescribed, and a lotion of tincture of kino and camphorated spirit to assist its effects. The powder to be used every morning, and the lotion every afternoon. He called about a month after, showed us his teeth and gums, firm and healthy, and very graphically observed he was himself again.

VEGETABLE TOOTH POWDER.

Of all the substances the dispensatory and experience furnish for making up a tooth powder of this sort, we prefer the following, both for their properties and fitness to form an agreeable dentifrice.

Fine powder of Florentine Iris,	6	Parts.
———— Pure Starch,	3	—
———— Quinine,	2	—
———— Hyoseyamus,	1	—
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	12	—
———— Refined Sugar at pleasure.		

Perfume the Iris with Otto of Roses, mix well together.
and colour with Carmine.

Florentine iris is a cheap and pleasant medium through which to apply the valuable substances contained in the recipe. The quinine, the efficient principle of Peruvian bark, is astringent and tonic. The hyoscyamus is highly sedative. Sugar and starch take off the medicinal taste.

This *mélange* is an excellent antidote for certain affections of the mouth. The lining membrane of the gums, jaws, and teeth inflame from many causes, and, if the inflammation be not counteracted, suppuration succeeds, and destroys the natural close union of these parts. Hereby the denture gets loose, and, the teeth shaking on the least pressure, only add to the evil. The substance of the gums and jaws themselves come to share in the disease, and gradually shrink away from repeated inflammation and frequent discharges of matter. Frequently, the accompanying pain is excruciating, and so general in the mouth, that the individual cannot say which spot is worst. In many cases, however, the

pain is so slight, and the other symptoms so obscure, that the only sign of the progress of this insidious affection is the gums shrinking away, and the teeth looking longer to the eye. Should the disease advance far, the teeth get very loose, give great annoyance in all the motions of the mouth, and seem beyond cure. When this affection is suffered to fasten on the mouth, it is very difficult to remove, we candidly allow; and, further, that to repair with artificial teeth the gaps it may have made in the denture, really adds to the power of the malady.

The causes of this affection are of two sorts, the *exciting* and *predisposing*. The *exciting* are, alternations of heat and cold, high seasoned kinds of food, teeth much decayed, catarrh, living in damp houses or localities. We do not consider tartar to be an exciting cause of this malady, though so like the one previously described in many respects. The former is wholly local, being caused by deposit of tartar alone: but the

present is very frequently constitutional, and produced by a variety of causes. Some tartar may be deposited on the teeth while this malady is going on, but still it is not the exciting cause. The *predisposing* causes are a scrofulous or debilitated constitution, use of mercurial medicines, inflammation of the lungs and bowels, sedentary occupations.

The vegetable tooth powder should be applied on a soft brush where there is much tenderness of the gums, or acute pain, but on a hard one, when they have got into a thick, insensible state. Friction is an excellent counter-irritant; it discharges in this case the superfluous blood from the parts, and prepares them for the tonic effects of the dentifrice. Quinine constricts and invigorates, while the hyoscyamus allays pain, and mollifies the effects of friction. Diluted solution of sulphate of zinc, used often, will be found a good adjuvant to the powder. In this case stimulating applications must not be used. When the affection depends on the constitution,

consult your physician. By these curative means the inflammation will be removed, the parts restored to a healthy condition, the teeth grow firm in their sockets, and the gums, on which almost alone, after a prolonged affection of this sort, the teeth depend for their stay in the mouth, grasp them tightly.

MINERAL TOOTH POWDER.

In compounding a dentifrice of this kind, we must be guided in a great measure by what the arts have taught us. The subjoined, from much experience, we have found to be a useful preparation.

Fine powder of Pumice Stone,	4	Parts.
——— Scuttle fish Bone,	4	—
——— Prepared Chalk,	4	—
	<hr/>	
	12	

Add a sprinkling of Subcarbonate of Soda.—Mix well together; colour and scent according to taste, and put through a fine sieve.

The pumice is a hard mineral, and quickly abrades; and, therefore, is very fitly employed

as a first substance in the process of polishing. Scuttle fish bone effectually smooths and polishes after the surface has been prepared by the punicee. Prepared chalk both assists the scuttle fish bone, and, as we before observed, is a good absorbent of acid. The sprinkling of soda is further to neutralize acid.

Of a very peculiar nature is that destruction of the teeth for which the above powder is prepared. It consists primarily of a decomposition of the enamel of the teeth; and, in the next place, of a mortification of that cellular tissue, in which the earthy part of all bones is deposited, but of which there is extremely little in the enamel. Commonly, its progress is so slow, and the attending pain so very trifling, that much injury is done before attention is arrested by it. The appearance generally presented is a narrow green or brown crescent on the enamel, close to the festoon of the gums, and extending between the sides of the teeth. This crescent, before changing colour, is extremely white and opaque in young persons,

and quite in contrast to the enamel remaining unchanged and translucent. If this affection be allowed to go on unmolested, the whole depth of the enamel is decomposed, the bony part of the tooth is next destroyed, and the crown, undermined, as it were, at last breaks over, leaving an ugly stump. Sometimes the whole anterior and lateral part of the enamel is stripped off, and the osseous portion of the tooth, become brown and soft, looks like a barked tree that has been for a while exposed to the weather. The surface of the enamel inside of the mouth is very seldom attacked, which we can ascribe only to the action of the tongue in its various movements.

The decomposition, which forms the primary feature of this affection, takes place from the law of simple affinity, by an uncombined acid, most probably the muriatic, stronger than that with which the earthy portion of the enamel is already in combination, existing in the mouth: and the reason why this decomposition occurs on the anterior and lateral parts of the

enamel, near the neck of the tooth, is from the acid always trickling off the festoon of the gum. The acid is usually confined for a long while to the spot first attacked, from the roughness it there creates. When the acid is copious and diffused over every part, a general denuding the teeth of their enamel takes place by the same process. The green or brown appearance following in the train of this decomposition, and marking the second feature of the malady, arises from the mortification of the tender cellular tissue of the enamel.

Apply the Mineral Tooth Powder on a hard brush, if the gums permit, in order to rub off the decaying and offensive matter, afterwards to harden the affected part by polishing, and to neutralize the destructive acid. These objects are fully accomplished by the ingredients of this sanitary dentifrice. The abrading quality of the pumice soon removes the foul spot from the teeth, and the hollow which is seen on its removal, being smoothed and

polished by the chalk and fish bone, these organs regain their uniform translucent appearance. Numerous instances of all this have occurred to us in an extensive practice. The Mineral Powder has been found very useful for those dotted or honey-combed teeth, described in a former chapter. It is the only thing that can safely rub out the minute dark spots upon them, and make their irregular surface smooth and polished. The chalk may serve an ingenious purpose, if the acid decomposing the teeth be the muriatic; for, by the law of chemical affinity, chloride of lime might be formed from the prepared chalk, which is the carbonate of lime; and as the chloride of lime is a bleaching or whitening salt, the teeth will, from the quantity formed in the mouth, be not only cleansed, but safely beautified. The dentifrice must not be omitted until the teeth are in good order, when it will be advantageously substituted by the Mixed Tooth Powder. Thus the teeth, instead of entirely spoiling and getting more disagreeable to look

at. shall again become ornamental, and continue to a distant period of life useful organs.

SORT MIXTURES FOR DENTIFRICES.

Such mixtures differ from powders only in being compounded with a quantity of syrup of honey. Some persons prefer this sort of dentifrice, but still we would administer the rule, never to use them unless their ingredients be known.

DETERGENT MIXTURE.

Take of best Spanish Honey, 2 Tablespoons full.

—	Calcined Magnesia,.....	1	—
—	Quinine,	$\frac{1}{2}$	—
—	Orrice powder,	1	—
—	Oil of Pimento,	20 Drops.	

Rub the powders well together, add the honey, and then the aromatic oil. Colour with cochineal. No further scent is required, for the honey is already delightfully flavoured with the perfume of the orange flower.

Evidently, this mixture cannot be used appropriately when the teeth are decayed.

CONSERVATIVE PASTE MIXTURE.

Take of Palm Soap,.....	2 Ounces.
— Carbonate of Potash,	2 —
— Myrrh in fine powder.....	1 —
— Sage leaves,.....	1 —
— Scuttle fish Bone,	1 —

Dissolve the soap in spirit of wine, or eau de Cologne, then add the carbonate, and having rubbed the myrrh, sage, and bone well together, mix the whole. For colour, add one scruple of cochineal.

This paste is advantageous in all cases.

ANODYNE PASTE MIXTURE.

Take of Transparent Soap,.....	1 Ounce.
— Tincture of Opium,.....	1 —
— Camphorated Spirit,	1 —
— Fine powder of Kino,	1 —

Dissolve the soap with the tincture, add the spirit, and then mix these and the powder together. Colour with rose pink.

Such a dentifrice will be found an excellent

temporary means of filling up tender and decayed teeth, as well as of soothing pain.

LOTIONS, ELIXIRS, AND TINCTURES.

These different preparations are likewise so many medicated dentifrices employed for maintaining the soundness of the mouth, easing pain of the teeth, and fortifying the gums. Those lotions, elixirs, and tinctures, having spirit of wine for their basis, are simple or compound, and replace the powders when there are decayed teeth which the brush cannot reach, or when the gums are excessively sensible. As these preparations are generally very concentrated, it is enough to pour a few drops upon the brush, or into a quantity of water. Usually, they are coloured with cochineal or saffron, and made aromatic by some essential oil.

COOLING AND DETERGENT LOTION.

Take of Rose Water,.....	4 Ounces.
— Sulphate of Zinc,	1 Dram.
— Bi-chromate of Potash,	1 Scruple.

Dissolve the sulphate and bi-chromate in the rose-water, and agitate before use. The chromate gives a beautiful orange colour.

Extremely useful for soreness of the gums, and for that affection vulgarly called scurvy of the gums. It will also fasten the teeth, and melt the tartar.

PARISIAN PHILODONTIC, AND ANTI-SPASMODIC TINCTURE.

Take of Eaû de Cologne.....	2 Ounces.
— Essence of Neroli,.....	1 Dram.
— — Cannella,.....	$\frac{1}{2}$ —
— Oil of Amber,.....	$\frac{1}{4}$ —
— Sulphuric Ether,.....	$\frac{1}{4}$ —

Colour according to taste, and about the time of pouring the mixture into the phial, add the ether.

Those who take particular care of the teeth like this dentifrice much, which leaves in the mouth an agreeable perfume. We pour a few drops of it into a wine glass full of water, where the brush is dipped with which we rub

the teeth and gums. By it the bad taste of the mouth is dissipated, and the firmness of the gums maintained. A few drops of it swallowed puts away certain nervous affections.

TONIC ELIXIR.

Take of Tincture of Bark,.....	1 Ounce.
———— Myrrh,.....	1 —
———— Kino,.....	1 —
— Oil of Lavender,.....	1 Dram.

Mingle, and keep in a glass-stoppered phial.

This elixir has the virtue of curing several affections of the mouth, such as sponginess and swelling of the gums, aphthæ, and of preventing them from bleeding. A few drops of it are put into a third of a wine glass full of water, which is kept in the mouth for a little while and the teeth and gums then rubbed with it. If this lotion be repeated twice or thrice a-day, the soreness, swelling, and supuration of the gums cease, the bad taste of the mouth goes off, and shaking teeth are fastened.

ANODYNE ELIXIR.

Take of Wine of Meadow Saffron,.....	1 Ounce.
— Pure Naphtha,	1 Dram.
— Tincture of Hyoseyamus,.....	1 Scruple.
— Essence of Neroli,.....	1 —

Mingle, and keep in a phial well closed.

Good for tenderness of the gums; and, when properly applied, an admirable charm for toothache.



CONCLUDING REMARKS.

REFINED CHARCOAL.

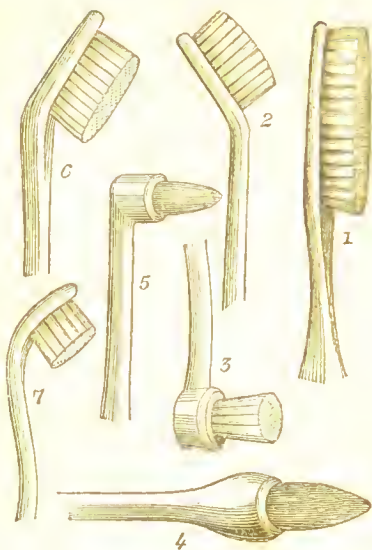
Refined charcoal, because an antiputrescent, has long been a popular dentifrice; but is now gradually wearing out. It certainly does not alter the enamel of the teeth, but when it gets between the neck of the teeth and gums, they become discoloured. There are so many good and pleasant substitutes, without any of its faults, that we need not regret its dismissal from the toilette.

SOOT.

Some people have fancied this for cleansing and preserving their teeth, because "*les petits ramonneurs*" have always a white denture,—quite forgetting that it appears so only by contrast with their skin.

ACIDS.

Acid dentifrices are prepared only by the knowing, to give at once a striking whiteness to the denture ; but we cannot be too circumspect in the use of them, since they have the same effect here as a few drops of any weak acid on polished marble. The calcareous phosphate, that gives its polish to the enamel, dissolves, and the teeth retain more easily the mud or tartar so apt to lodge about them. An indelible yellow tint fixes on the teeth, if we continue to use such dentifrices ; and, the gelatinous portion of their substance being laid bare, they become sensible to the least impressions, and ultimately decay.



1. Is the Tooth Brush in general use: it is best adapted for the surface of the teeth next the lips.
2. Is one for cleaning the surface of the upper teeth next the tongue, and those interstices between the teeth produced by filing.
- 3, 4, 5. Are called Pencil Tooth Brushes, and are applied to deeply grooved, or hollow, teeth.
- 6, 7. Are adapted for cleaning the side of the under teeth next the tongue.

Brushes of any of these shapes may be obtained through the usual dealers in such articles.

Tooth Brushes are of general application, and the hairs, or bristles, of which they are made, may be considered as so many tooth-picks for the purpose of removing the mud, or tartar, which is deposited on the teeth. They also maintain the toilette of the mouth in the best order, and preserve the gums as well as the teeth from the diseases to which they are subject. When for very young persons, they should be straight, soft, and have two, or three, rows of hairs; for those having very long teeth, hard, with five rows. The tooth brush in general use has four, which make a very neat shape. The little bunches of hair should be openly arranged, as this allows the brushes to be easier and better cleaned.

In exercising the tooth brush upon the external surface of the teeth, it should be moved upwards and downwards, as well as from right to left, in order that the tartar may be effectually removed from the interstices between the teeth.

CAMPHOR.

Every person of taste will dismiss camphor from the toilette, and certainly without abridging its elegance and utility.

Since dentifrices are intended really for preserving the whiteness of the teeth, banish from your recipes all substances fitted to alter the enamel.

Observe their effect on the gums.

Vary your dentifrice according to the state of the teeth and gums.

CHAPTER V.

The Teeth.

DECAY OF THE TEETH : ITS CAUSES AND EFFECTS. — FILLING UP DECAYED TEETH. — TOOTHACHE : ITS TREATMENT. — TIC DOULOUREUX.

DECAY of the teeth ! ominous words—foretelling effacement of one of the finest features, destruction of our comfortable masticators, toothache—the most annoying of all things, and, to many, serious pecuniary outlay for artificial substitutes. The share in this category of human ills, we have occasion to know, is pretty general. Few in the better classes there are who do not experience, personally, more or less of the miseries of decaying teeth ; and these miseries, sad to relate, are, as society advances, both increasing and extending. Why

do our teeth decay so much now-a-days? is a question frequently asked. In such a state of things, how fortunate! could a *cordon sanitaire* intercept its progress, or a *general board of health* assist us to a remedy. Notwithstanding, would the age, so chary of its comfort, but listen to the guides, much might be done: nay, carried across to that Elysium where "*sani dentes in sano ore*" is the sum of happiness, we might, (*quid rides?*) while Nature broke down in all her other functions, make sport, with a well stocked mouth, at decay's harmless efforts. Yet, until society, growing wiser in more respects than the preservation of the teeth, returns to the simple manners of its ancestors, our beautiful countrywomen shall still have to regret its untoward attacks upon their charms; and those "*rarissimi rerum*" of the other sex, so aptly designated by Horace, find it one of the saddest plagues of their toilette.

Whatever be the actual causes of this change in the dental organs, these the public are not

likely to ascertain for themselves. 'Tis an obscure subject, and must remain so, since the teeth, from their structure, are out of reach of a critical examination. On this, as on many other medical points, there is an abundant and entertaining variety of opinion amongst the professors. But, while the unlearned in this affair can only observe,

“ Who can decide, when doctors disagree ? ”

they have at the same time the consolation to hear the dogmatist exclaim, amidst his fancied attainments,

“ But let us try these truths with closer eyes,
And trace them through the prospect as it lies ;
Here for a while, my proper cares resigned,
Here let me sit in sorrow for *mankind*,—
Like yon neglected shrub at random cast,
That shades the steep, and sighs at every blast.”

The remedies employed for the preservation of the teeth are very limited, founded chiefly, from the nature of the subject, on the notice

taken of the effects of caries, without much reference to its causes: and, often, merely mechanical. We do not see that any assumed opinion relative to the organization and diseases of the denture, could alter the practice followed by respectable dentists. You will find in this, as in other things, that it is easier to prevent than to cure. Nature, and the circumstances of the case, impress the fact, that regular attention to the state of the mouth and denture is the best antidote to decay. For this end, since the teeth are so prone to decay, the opinion of the dentist should be added, now and then, to the cleanliness and care observed by ourselves. By such a course, much may be accomplished to prevent decay, and to obviate the necessity of having to use artificial teeth, now getting extremely general.

Let no one suppose we refer to a point not so extensive as we seem to understand. The difference in the soundness and durability of the dental organs taking place in all classes, is quite remarkable, especially in the strictly

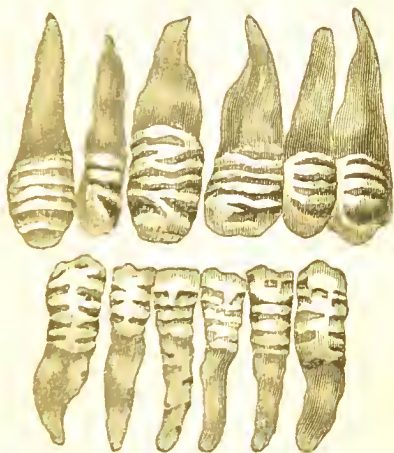
mercantile portion of society. How very frequently we meet with those far advanced in life, with scarcely an imperfection in their denture, while their grandchildren require to be constantly in the hands of the dentist for some operation or another. Why should there be so many dentists, if it be not really as we have said? To what can we ascribe this altered state of things, but to changes in our manner of living which, in some inexplicable way, is injurious to the health and permanency of the denture? Wherever we find people living on plain fare, much in the open air, and leading an active life, there we still meet with unblemished teeth, and "the oldest inhabitant" displaying a row of them that might well provoke the envy of the youngest epicurean of our luxurious cities. Women brought up amidst the refinements of society, or partaking the inactivity of city life, are more subject to decay of the teeth than men. Not so, however, the vigorous daughters and laborious wives of the hardy

peasantry, whose immaculate dentures vindicate and recompense their unremitting toil and frugal life. And, hence, the advice on the care of the teeth, that would be highly amusing to the hardy mountaineers of the north, or to the temperate and merry peasants of France, must be received with a grave mouth by us.

Constitutional and hereditary diseases obviously predispose the teeth to decay, and render them more susceptible of every sort of injury. A delicate state of health in infancy and childhood, and the use of calomel in that season of life, occasion changes in the teeth at a very early period.

An illustration of our remark is furnished in the following figure, which represents that erosion or atrophy of the enamel occurring while the teeth are in the course of being formed and completed within the gums, from a peculiar malady in the organs destined for the elaboration of the enamel, which is thought (correctly or not we do not stop at

present to inquire) to depend on some general affection of the system. When the dentary organs present this aspect, of which we have chosen an extreme case, they are called honey-combed, or dotted teeth.



Long confinement to a sick room at any season of life, is highly detrimental to the denture, and lays the seeds of future decay. Serious injury, sooner or later, follows the

free use of the mercurial preparations, and of the mineral acids. For this reason, the mouth should be carefully and often rinsed with a cooling astringent while the system is under the action of mercury, and the mineral acids be always sucked through a straw or pipet into the stomach. Sugar is not injurious from any direct influence, but from creating acidity in the stomach. In certain circumstances it appears not to injure at all. General de Beaufort, in the French service, ate a pound of sugar every day for forty years, and died at the age of seventy without one decaying tooth. In a former part of this work, we have spoken of some other causes of decay of the denture, where it was necessary we should give some precautions for the better preservation of it.

The most obvious affection of the dentary organs at present met with is a softness in their structure, that not only impairs their beauty and durability, but makes them liable also in a tenfold degree to all the causes of

decay. The multitude of spoiled teeth, and the numerous gaps in the dentures of young people, are abundant evidences of this. By such a change in their condition, that very circumstance, viz. the close setting of the teeth, which nature intended for their solidity and permanency in the jaws, comes to be the worst thing that can happen them; for, these organs by pressing too close together, and rubbing on each other, as in eating, often fall into decay a few years after having taken up their position in the dentary circle. In this respect they only follow a simple law of the general osseous system, whereby the bones from undue pressure waste slowly away; but with the additional circumstance on their part, of growing black from the mortification of their exposed minute cellular substance. Hence, decay on the lateral part of the teeth, is by far the most frequent, and, unfortunately, when arising from such a cause, is not confined to one pair. Once begun in any tooth it soon makes progress, and, a cavity

being formed which becomes the receptacle of impure matter and acid, layer after layer is decomposed, until the crown at length undermined breaks over, leaving only an ugly stump in the jaw. On whatsoever side it occurs, this is the general course of caries or decay—from a small black point in the enamel, to the entire obliteration of the crown. It is in the above-mentioned way alone, that the teeth can be said to spoil each other. The popular notion that they infect one another, is really quite absurd. That the teeth decay in pairs is a common observation; and it is strictly correct, for, those exactly similar on each side of both jaws being produced under the same influences, are like in structure, and being exposed together to the same causes of injury, are very apt to spoil at the same time. One person's teeth are found to decay much more rapidly than those of another.

Different methods have been proposed for obviating the evil of lateral pressure. Some

recommend the dentary circle to be widened by the assistance of an elastic plate.



The first is the profile of a person fourteen years of age, with the dentary arch of the under jaw projecting beyond that of the upper, and forming the *long peaked chin*. The second figure is the same profile at the age of fifteen, with the anterior teeth of the upper jaw well ranged, which has been accomplished by mechanical means.

This change not only shows what can be done by an elastic plate to give room to the teeth when pressing close together, but also in bestowing a natural and pleasing arrangement to the denture.

Eminent French dentists adopt the plan of gaining room to the range of teeth, by passing

a smooth thin file several times between as many of them as possible. The first of these two has its peculiar objections, and the French plan is suitable only when the teeth being perfectly well arranged yet seem to press too close together. But, to regulate the process of the second dentition according to the natural order, is the wisest means of guarding against this species of decay, and a judicious regulation according to the tables we have elsewhere laid down, will be found beneficial in the most of cases. Should the teeth, however, come at last to be over-crowded and out of range, the most effectual method to prevent the consequences of lateral pressure is to remove one or more from the dentary group. When the fore teeth are extremely close, and seem inclined to spoil even before the dentary circle is completed, then they must either be separated by wooden wedges, or one at least be removed, for safety to the rest. In determining to remove a tooth, fix on the most suitable, all things considered. We

select a little grinder in the case of a young woman, but a side tooth in that of a young man, as we should be guided by what is ornamental on the one hand,—by utility on the other. No one would ever think of taking out a front tooth for this purpose, unless it were so bad as to give little hope of remaining long in the mouth. None should oppose the early removal of certain teeth for such an object, since every day's experience confirms the fact that, if the dentary arch be over-crowded and irregular, they disarrange the toilette of the mouth, fall into decay, give rise to much pain, and ultimately occasion many to be extracted. If any of the teeth have got decayed at the side, they ought to be filed so far, and have the remainder of the brown and spongy portion cut out by an excavating instrument; and should any cavity exist after this, let it be filled with gold, white foil, or amalgam, as the case may permit. But, should a smooth or nearly level surface be formed by the filing and

hollowing out, then it ought to be kept well polished by means of a piece of fine cloth, or a wooden tooth-pick, and a little mineral tooth powder.

Decay seldom ever occurs on the side next the tongue, but often enough on the side next the cheek and lips. In the latter case, it happens either exactly at the neck of the tooth, or at that part where the enamel ending in a thin scale lies contiguous to the gums. The teeth, we have remarked, when taken great care of, seldom decay at this spot. When decay does occur here, it should be removed, and the hollow filled up if possible. Several interesting cases of this kind have passed under our notice, in which we had an opportunity of observing the advantages of the practice recommended, in quieting pain, and in enabling to retain useful organs.

That part of the neck which is at the side between the teeth, is sometimes the seat of disease. In this instance, it cannot be the

result of pressure, as a space actually exists at this spot which is filled up by the gum itself. It is to be ascribed to the bony part being much exposed at this quarter, to acid resting on the edge of the festoon of the gums, and to the difficulty of there applying the cleansing apparatus of the toilette. Should your teeth seem inclined to decay on the spot referred to, pass a few silk threads covered with the mineral powder between them, so as to rub off the dark coloured portion, and to keep the surface polished, whereby it will better resist decay.

Those furrows on the grinding surface of the back teeth, which make them look like so many single ones joined together, are very often the seat of decay. Here, from the method of the formation of the teeth, the enamel is extremely thin, and sometimes imperfect. Numerous dark specks are generally seen up and down in the course of those furrows on the grinders, which gradually become small, circular, or oblong, cavities.

At first they can be easily filled up, by which operation, if well done, the dentary organs shall last for many years longer than they would otherwise have done. The operation of filling up, when early performed, also prevents the occurrence of toothache, and pre-occupies a cavity where food would stagnate, both to increase decay, and to pollute the breath. As, from the nature or structure of the dentary organs, decay makes quick progress in this quarter, and as, when the cavity is large and deep, so much pain is likely to ensue, as to render the filling up a very disagreeable, if not unsuccessful operation, the dentist ought to be occasionally requested to examine the teeth in every spot.

It has been stated, on something like good authority, that decay likewise occurs in the middle of the bony structure of a tooth, but the direct and indubitable evidences of this, if any such have ever really existed, are much too few to allow of forming a decided opinion.



This mirror is indispensable to dentists, to enable them easily and correctly to ascertain the caries or decay situated on the internal surface of the teeth.

The glass is oval, and should be concave for the purpose of enlarging objects. It is set in silver, and turns upon two branches fixed to a handle.

Every person ought to possess one, and many consider the apparatus of their toilette incomplete without it. The way to examine one's own teeth in every direction, is, to stand before a looking-glass, then to place the dentist's mirror so as to reflect in the former the part wanted to be brought under view, and in the looking-glass will be seen what the mirror is reflecting. Such inspection of the masticators requires a little practice: but many perform it with great facility.

As it is of consequence to find out cavities, however small, as soon as they occur in the teeth, the dentist's mirror should be held in the left hand during the inspection, and a sharp pointed piece of steel bent at an angle in the right, which is to be passed slowly over all the black or decayed looking parts, in order to detect the openings on the surfaces of the teeth.

FILLING UP THE TEETH.

Various means have long been in use for filling up those teeth that have become hollow from decay; and the process has received the different names of plugging, and stopping, in addition to the one we have selected from the dentist's vocabulary to express our view of it. This practice began to be generally adopted in France, about the early part of last century, and in the progress of society has been found, after some improvements, very useful for the preservation of the dentary organs. Lead and tin were first used, but gave place to the precious metals. Gold is now preferred, though tin, from its toughness when in the leaf, is perhaps the most suitable. In America, where caries of the denture begins very early in life, and is very general from extremes in the climate, and from fondness for good eating, the practice has become universal. The American dentists are certainly superior to the British in this point. Marvellous stories

are told respecting the advantages of filling up decayed teeth, even by writers on dental subjects, as if they were ordinary matters. But it occurs to us, these were intended only for the *public*. In this case, our motto must be, *Quiescant pace*. To fill up cavities with gold, or white foil, which includes platinum, silver, and tin leaf, by hard pressure, is the most effectual means of making the teeth solid again. This method, however, can be adopted only when the teeth are free from pain, as extreme agony almost always follows from filling up tender parts, and as the teeth we thereby attempted to preserve must in consequence be often extracted.

The French dentists, who have been remarkable for their assiduity as well as for their general acquirements, and who have almost always taken the lead in the profession, thought that an improvement could be made on the preceding method, and for this end introduced the fusible metal, which is melted at a small degree of heat.

Bismuth,.....	3 Parts.
Lead,	5
Zinc,	3 —
Quicksilver,	1 —

Melt the three first together: as it cools, pour on the quicksilver, and cast the compound into small shot.

When a cavity is to be filled, one of these is placed there, and a suitable steel instrument heated at a spirit lamp being applied, the metal is fused into every corner. The chief objection to this plan is, that the fusible metal on cooling and becoming solid contracts, and, being too small, rolls about in the cavity. It is also unsuitable for tender teeth, and to manipulate in one's mouth with a red hot iron is, besides, rather an awkward process.

CEMENT OR AMALGAM FOR TENDER TEETH.

Take a small quantity of silver leaf or powder, and quicksilver. Rub them together until the silver be dissolved. Put into a chamois leather bag, press out the superfluous quicksilver, and make a paste of what remains.

A few years ago this peculiar composition of metals was brought forward, as an improve-

ment in the art of filling teeth, which, though operated with while perfectly soft, gets extremely hard shortly after.

The amalgam is immediately to be put into the cavity, where it will in a short time grow as hard as a stone, and render even very bad teeth fit for all purposes. Let the cavity be washed out beforehand with an anodyne tincture, and wiped dry with a little cotton. Properly, the tooth or teeth in which it is placed should not be used for a few days, and, hence, one side of the denture only should be done at a time. Sometimes the cement has the effect of quite removing pain from tender teeth. From the ease of the whole operation, it can be used in many instances, such as invalids, where the ordinary means would be altogether inapplicable. We have seen teeth, so bad that no one would ever think of filling them up with gold, white foil, and so forth, made solid again with this cement, and continue useful for several years. On the other hand, it is exposed to the objection of blaekening

with the saliva, and of darkening the teeth where it is put. Under the name "Succedaneum," this amalgam, so serviceable in many respects, has been puffed on all hands, by those grand itinerating dentists, to their immediate emolument and the great disappointment of the credulous.

Should it happen that the teeth are too tender to admit of being filled up with metal of any kind, or any other circumstance puts it out of your power to consult a dentist for some time, make use of a temporary cement composed of mastich, albumen or white of egg, laudanum, and floss silk cut small. The mastich to be softened by the laudanum, and albumen and floss silk added to give cohesion.

TOOTHACHE.

The peculiar pain arising in the dental nerves, on decay of the teeth, has received the malediction of every sufferer, and exhausted ingenuity for its relief. There is no specific for toothache. Physic and art usually exhaust

and may come on at night without any apparent cause, especially when getting warm in bed. Local applications, in this case, are of little use. You must attend to the actual source of the pain. For this purpose, a wine-glassful of the following mixture should be taken every two hours until the bowels are relieved.

Take of Epsom Salts,	1 Ounce.
— Tincture of Senna,	2 Drams.
— Laudanum,	20 Drops.
— Cinnamon Water,	8 Ounces.

The salts ought to be first dissolved in hot water, the cinnamon water added, then the tincture, and last the laudanum. If the pain still remain, take ten grains of compound powder of ipecacuan, or forty drops of ipecacuan wine, at bed-time.

A gentle emetic has frequently cut short an attack of toothache. About a wine-glassful of ipecacuan wine is a very mild and safe emetic. To keep up nausea until the pain

abates may be to many a less formidable method of accomplishing the same thing.

NAUSEATING DRAUGHT.

Take—Tartar Emetic,.....2 Grains.
Orange Flower Water,.....5 Ounces.

Dissolve the emetic in the orange water, and sweeten with syrup. Of this a table-spoonful is to be taken every hour till the tooth aches no longer.

Earache is occasionally combined with toothache, and may happen to be the worse of the two. It occurs from the nervous connection between the ear and the teeth; but cure the toothache, and the ear will soon be well.

An attempt is made now and then to burn out the dental nerve by means of a heated wire. It may, indeed, touch the tender point and give pain, but cannot destroy the nerve; for, a wire of the thickness to be applied to the tender cavity cannot be carried from the flame to the mouth, and through the moisture

in the cavity, without being so much cooled as to be of no service. In short, it is a barbarous practice, and has been followed by serious consequences.

Blisters on the cheek, behind the ear, on the neck, and even the arms, have been recommended as a cure. Such offensive and clumsy methods can be tried by those having the fancy for them.

TOOTH EDGE

Is a singular sensation in the denture, lasting but a short time, and generally passing off with the cause. It depends, when most disagreeable, on grating sounds to which we are unaccustomed, and on acid, acrid juices touching the teeth; on the one hand occasioned by nervous sympathy, on the other by some change, probably softening, in the surface of the enamel. Should it remain after eating fruit, rub the teeth with a warm linen cloth, or with mineral tooth powder. Sorrel, though

extremely acid, is said to remove it at once.

TIC DOULOUREUX.

This is an intractable complaint, requiring all the skill of the ablest physicians and surgeons. If originating from decayed teeth, extraction is the only remedy, and, when connected with those nerves that go to the dental organs, the removal of all rotten stumps and irregular teeth will likewise be beneficial.

EXTRACTION.

After all experience, extraction is the sovereign remedy for decayed teeth; but no directions can communicate that coolness and address which must be derived only from extensive practice.

On this subject, we shall gratify ourselves by quoting the sentiments of that able and accomplished Dentist, Mr. Thomas Bell, Lecturer on the Anatomy and Diseases of the

Teeth at Guy's Hospital, London. "The operation of extraeting the teetb, though not unfrequently consigned to persons who have no pretensions to professional knowledge, and, in many cases, even to the lowest mechanics, is one which nevertheless requires, for its judicious and safe performanee, as much eare and firmness, and as eorrcet an acquaintanee with the anatomy of the parts coneerned in it, as many of the operations of surgery, to which a much higher degree of importance is commonly attacheed. That in by far the majority of instanees, this operation is performed by mere mechanieal force, without any very serious consequences occurring, may perhaps be granted; but it is no less true, that even in the most simple eases, the pain of the operation is greatly diminished by a judicieous choice and application of the instruments; whilst the frightful results which sometimes acerue from the employment of ill-direeted violence, forcibly point out the necessity of some degree of surgical skill to

render it at once safe and successful. Every country village has its stories of the loss of portions of the jaw-bone—the extraction of sound teeth in mistake for the decayed ones—and various diseases which are attributed with greater or less truth to this cause, and for which, the barber or the blacksmith has to atone.”

EXCISION.

Excision was some time ago substituted for extraction by a person named Fay, who came over from America and set up in London. His way of operating was to cut off the crown of the affected tooth with a huge nippers, and to rub the root remaining firm in the jaw with nitric acid. This plan, like all others, had its day in the metropolis, but soon fell into the disrepute it so fully merited. Why it should have received even a trial, can be accounted for only by the unsuspecting credulity of a certain portion of our countrymen.

WHAT SHOULD BE DONE AFTER
EXTRACTION.

The mouth, on extraction of a tooth, ought always to be rinsed with a cooling lotion. Should a troublesome discharge of blood take place from any artery or arteries of the part whence a tooth has been extracted, immediately have recourse to some metallic astringent. Strong solution of sulphate of zinc, or of bi-chromate of potash, are useful styptics on all ordinary occasions. A mixture of the two, in the proportion of

Sulphate of Zinc, 1 Dram,
Bi-chromate of Potash, 1 Scruple,

we have found very effectual in stopping the hemorrhage.

If these means fail on any occasion, roll up a small piece of nitrate of silver in so much cotton as is necessary to fill completely the part where the tooth has been removed, and keep it firmly there either by closing the teeth,

or pressing upon the stuffing with the finger. The effect of this simple plan is to constrict the bleeding vessels, and to clot the blood, which prevents any further discharge. A piece of cork or sponge may be thrust into the place for the same purpose. Replacing the extracted tooth is, by some, said to be the best way of arresting the flow of blood. We do not think so: besides, it is a very painful one. When teeth are extracted towards evening, or during night, the patient should go to sleep with the head placed high, to lessen the chance of bleeding while asleep.

CHAPTER VI.

The Teeth.

ARTIFICIAL TEETH, AND ARTIFICIAL PALATE.

ABOUT the close of the seventeenth century the fashion of wearing artificial teeth began fairly to be revived. By that time, in France, many had got to wear them, and the streets of Paris were here and there illuminated with the sign of some flourishing artist. Such a fashion, we can easily suppose, was not altogether frivolous, but rested on something like necessity. Various circumstances would occur making it proper for individuals to repair the gaps in their denture, and obliging them to call in the aid of some suitable artist. The revival of the art was probably owing to some ingenious persons amusing their leisure by fitting themselves with artificial substitutes,

and communicating the advantages to their friends. Perhaps, this is the best reason that can be assigned for the origin of the art at all. Be this as it may, the very same occasions that directed the attention of surgeons of those times to the construction and improvement of artificial palates, would, if nothing else did, suggest to many the idea and utility of fabricating teeth. In our day, so many reasons contribute to produce gaps in the denture, and total obliteration of the masticating apparatus, that of thousands the comfort depends on artificial substitutes, particularly in the declining periods of life. Bad teeth walked in the train of Rome's advancing luxury, and in the days of her splendour, we hear, that the wealthy citizens were in the habit of renewing the beauty and comfort of the denture by the artist's aid. Other nations of antiquity, in the same circumstances, have also availed themselves of the resources of art to repair the injuries time or disease had done to this important part of our organization.



The same Face with, and without the Teeth; showing, impressively, the necessity for Artificial Substitutes.

At the beginning, the manufacture of artificial teeth occupied a very humble station, and was practised as a secret art. Considerable delicacy was felt on the point of using them, and the wearers also kept the matter as far as they could to themselves. In those early days, it was customary for the dentist to wait upon the patient, followed by his man carrying a great bag full of instruments and tools of all sorts. When it was the business to fit his patient with an artificial apparatus, he sat down before him, and, from simple observation of the parts, sculptured it out of some piece of bone, horn, or ivory. The art, however, soon emerged from this state, and the fees asked by the occult practitioners were so large as enabled them to make great improvements. As business increased, they made themselves of much importance, and, while the public knew little of the rising profession, many and curious were the tricks tried in France and elsewhere to attain a profitable notoriety. The art was carried to other coun-

tries: and, such was the emolument then derived from it, and so low the conception of what a dentist should be able to do, that persons, with no qualification but the resolution to avail themselves of the public ignorance and want of taste on the subject, eagerly adopted the profession. It has never been incorporated nor protected at all in any country, excepting France, where some trifling forms are observed, and, of course, is open to every one.

Near the beginning of the eighteenth century, there flourished one Pierre Fauchard at Paris, a famous dentist, who, after a thorough study of his profession, and very many years' practice, wrote a book detailing at considerable length all the points connected with dental surgery and mechanism. Since then, the art has gradually advanced, and become so complete, as well as complicated, that, besides much general knowledge, great mechanical skill is requisite for its proper management. In general, empiricism and

or pressing upon the stuffing with the finger. The effect of this simple plan is to constrict the bleeding vessels, and to clot the blood, which prevents any further discharge. A piece of cork or sponge may be thrust into the place for the same purpose. Replacing the extracted tooth is, by some, said to be the best way of arresting the flow of blood. We do not think so: besides, it is a very painful one. When teeth are extracted towards evening, or during night, the patient should go to sleep with the head placed high, to lessen the chance of bleeding while asleep

CHAPTER VI.

The Teeth.

ARTIFICIAL TEETH, AND ARTIFICIAL PALATE.

ABOUT the close of the seventeenth century the fashion of wearing artificial teeth began fairly to be revived. By that time, in France, many had got to wear them, and the streets of Paris were here and there illuminated with the sign of some flourishing artist. Such a fashion, we can easily suppose, was not altogether frivolous, but rested on something like necessity. Various circumstances would occur making it proper for individuals to repair the gaps in their denture, and obliging them to call in the aid of some suitable artist. The revival of the art was probably owing to some ingenious persons amusing their leisure by fitting themselves with artificial substitutes,

and communicating the advantages to their friends. Perhaps, this is the best reason that can be assigned for the origin of the art at all. Be this as it may, the very same occasions that directed the attention of surgeons of those times to the construction and improvement of artificial palates, would, if nothing else did, suggest to many the idea and utility of fabricating teeth. In our day, so many reasons contribute to produce gaps in the denture, and total obliteration of the masticating apparatus, that of thousands the comfort depends on artificial substitutes, particularly in the declining periods of life. Bad teeth walked in the train of Rome's advancing luxury, and in the days of her splendour, we hear, that the wealthy citizens were in the habit of renewing the beauty and comfort of the denture by the artist's aid. Other nations of antiquity, in the same circumstances, have also availed themselves of the resources of art to repair the injuries time or disease had done to this important part of our organization.



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assumption have given place to a better order of things, and the respectable practitioners of the present time are very unlike the olden restorers of the art. In France, Britain, and other countries, men honourable from their education, long training to the business, and the principles with which they conduct practice, now occupy the profession and superintend its labours. They are to be found in every city of the civilized world.

In the midst of our levity at this beneficial change, we cannot refrain from anticipating more remarkable things. Perhaps, we shall yet hear of those gentlemen in the far east and west, styled chiefs, and “your majesty,” who love to dress their heads with feathers, and to score their faces in fantastic tatoo, respectively issuing a commission to some imported artist, constituting him his majesty’s own dentist; and that somewhere in their dominions an enormous task dependeth from a “wide spreading” tree, notifying thereby, to all and sundry, that in this place his

majesty's dentist effectually repairs the masticating mills of the lieges. We, therefore, do not wholly agree with a certain facetious writer in one of the leading periodicals, styling himself FANG, who, under a hypercritical spirit that inconveniently searcheth into the very bottom of things, proceedeth in the following humorous strain: "Few are the arts and sciences that may not be acquired now-a-days, in the space of ten minutes, and at the cost of twelve pence. We are taught how to live handsomely on one hundred pounds per annum—how to preserve our sight, our hearing, *our powers of mastication*—how to write, to spell—to speak French, Spanish, High Dutch and Low—how to know the stars and the glory thereof—and to reckon herbs and flowers as cunningly as Solomon, even unto the hyssop that groweth upon the wall. Each of these accomplishments, we find, may be purchased in ———, for the moderate price of one shilling, current coin of King William's realm of Great Britain.

“ It strikes us, however, that, much as has been said on every subject proposed, at the rate of a farthing a phrase, a few doits' worth of good counsel might still be added to each of the manuals in question. On the TEETH, for instance, so much as has been told us of our grinders—their coming and going—their preservation and decay—full as much has been left unsaid. We are advised when and where to use or spare them—when and how to brush or sponge them—with what powder, dentifrice, or paste, to administer to their infirmities. Cures infallible, orvietans, and odontalgies, are propounded for their aches; while every gaping fissure may be filled up with mineral succeedaneum, marmoratum, gold, silver, or lead. Even literature lends its aid to the cause, and ‘ the grinning honour that Sir Walter (Scott) hath,’ dares not show its teeth beside the authorship of Mr. *****’s paragraphs, or those of Desirabode of the Palais Royal. Yet, after perusing all, and putting all the promises

held out to the proof of practice, we maintain that the better part of dentological wisdom may be still accounted among the occult sciences."

The manufacture of artificial teeth, where properly carried on, has now really arrived at so much perfection that they can be fabricated in the most elegant and comfortable manner. It is, in this respect, on the footing of any other art, and requires several years' apprenticeship in order to know its different departments, and to work at them with ability. Many of the arts are carried on by deputy, but the complete dentist must actually adjust every artificial apparatus to the mouth by his own mechanical skill and taste. Consequently, it is an understood affair amongst respectable dentists that, to carry it on with ability and with fairness to the public, a long course of systematic training is necessary. That in many instances the case is reversed, we do not mean to conceal. On this point we quote with entire approval the opinion of a well

known London dentist, J. Paterson Clarke, M.A. “ One thing becomes evident from the study of the various processes of constructing artificial teeth, that the dentist who would render them comfortable to the wearer, must himself be a competent workman, and not dependent on other and superior mechanics.

“ Beautifully executed artificial teeth, like decoy ducks, are to be seen hung out in windows, and described in advertisements, when the parties professing to have made them cannot even bend a wire or clasp to a tooth without breaking it. Such dentists, perhaps, never formed a single tooth from ivory, never raised a gold plate on a model, and never made the wearer of artificial teeth comfortable; and they never can. The real maker of artificial teeth, that is, the person who can do justice to his patient, has much to do in his presence; nor can his skill, or the want of it, be concealed from an observant patient. But the latter too frequently, perhaps generously, ascribes the apparently

unconquerable difficulty to the art, and not to the artist."

Common bone, horn, and ivory, are the materials whence artificial teeth were fabricated at the beginning of the art. In its progress finer and more durable substances came into use; and natural teeth were selected as the best means for giving natural beauty to the artificial substitutes. The latter were adapted to the gaps in the denture, and to the contour of the mouth, by different plans. Silver, and gold, frames were afterwards adopted, as a more durable, and often more convenient method, for constructing the apparatus in which natural teeth are used, than the bone or ivory sockets. In the course of our trade with Africa, the tusks of the hippopotamus or river horse were collected and imported, which furnished the dentist with an excellent article for manufacturing artificial teeth of different kinds. These are far superior to the other species of bone, being covered with a beautiful enamel that

can be turned to use, and being extremely white and dense in structure. Amidst all these improvements, it was still to be desired that materials should be employed in the fabrication of dentary apparatus that would not spoil by the juices in the mouth, and would also remain unchanged in colour. This was accomplished at the close of the last century by an ingenious French dentist named Chemant, who invented the ferro-metallic or mineral teeth. All the former materials, excepting gold, spoil in the mouth, discolour, and become highly offensive, but the mineral pieces continue invariably the same. The latter, however, are not so convenient; are liable to break, and not easily repaired, and have never yet been made to resemble natural teeth exactly either in shape or colour. Shortly after this, platinum was applied to the arts, and furnished a cheap substitute for gold, without the disadvantages of silver, which is blackened and corroded by the salivary juices. By the generality of respect-

able dentists, the only materials used are fine hippopotamus' tusk, gold, and the best natural teeth ; but when a peculiarity exists in any case, either from the tusk and natural teeth spoiling too fast, from the patient's fancy, or from any other reason, single mineral teeth are likewise employed.

When artificial teeth are wanted by any one, the dentist, after operating on the mouth as the case may require, proceeds to take an impression with wax of the parts to be fitted, from whence is formed the plaster of Paris model, on which he constructs or fabricates the apparatus with various tools. After the teeth have been sculptured and arranged to his satisfaction, they are finished in an elegant manner by different means. But, should a frame of gold, silver, or platinum, be necessary in the apparatus, then zinc, brass, or bronze stamps are formed from the model, by which the frame is struck to the shape of the gums. Much time is occupied in properly completing the more complicated apparatus of dental

mechanism. In course of the processes in the dentist's laboratory, the skill of the jeweller, the founder, the clockmaker, and the engraver, are all called into exercise; and without this, nothing can be done that shall either be creditable to an artist, or quite comfortable to the wearer of artificial teeth.

Various are the methods by which artificial teeth are fixed in the mouth. Many people have the silliest notions upon this point. Some have the idea that these substitutes are planted in the jaw like their predecessors, and some believe that a very horrid operation must be gone through before they can be rightly placed. No doubt such notions have sprung from the rude and painful methods long ago followed. As a general observation, ease and comfort are the characteristics of those plans adopted by properly trained modern dentists for replacing losses in the denture.

The ancient methods of fixing artificial pieces into the dental gaps were, like the constructions themselves, extremely clumsy,

and injurious, besides, to the teeth to which they were fastened. Silk, catgut, silver or gold threads, were the general means by which the artist of those days, when he got a gap to fill up, tied or fastened the substitutes to the adjoining teeth. As the silk and catgut soon become relaxed, and as the silver quickly corrodes in the mouth, these ligatures had frequently to be renewed, which is excessively troublesome to the patient. Ligatures have the further disadvantage of ultimately cutting the teeth through where they are tied. There is the additional objection to them that, from soon getting loose, they allow the artificial constructions to roll about in all the motions of the mouth, whereby the teeth that served as fixtures are ultimately dragged out.

Another plan often followed for the fore teeth was, to cut off the crowns of the spoiled ones, and to engraft others on their roots, every way similar to the former when they were still perfect, by means of metallic or wooden pivots.



This figure represents the crown of a tooth screwed with gold wire, by which method it is prepared for being engrafted as a pivotted tooth.

They got the name of pivotted teeth, and in many cases were convenient, durable, as well as remarkably neat. But, before this plan can be adopted, the natural cavity in the root of each tooth must be opened by a stilet, and gradually enlarged to a proper size with broaches. At the same time that the broaches widen the cavity, they cut out whatever remains there of the vessels and nerves of the tooth. Very frequently, so tender are the nerves of the root, after the decayed crown has been sawn, cut, or filed off, that it is impossible to proceed in thus fixing artificial teeth. Again, gum-boil and extreme pain

sometimes occur around the root operated on, and at others the pivotted crown grows annoyingly loose from the root wasting away. This plan ought never to be followed in cold, damp weather, unless necessity require, and then every precaution must be taken to escape inflammation in the parts under operation.

Of all the unreasonable and unfeeling methods for remedying defects in the personal economy, transplantation of teeth from the mouth of one living person to that of another was the most preposterous. As a matter of course, only the wretched and destitute could be induced thus to administer to the wants and wishes of the opulent. It was imagined that the transplanted tooth would take root as it were, and become firm in its new situation. Such a method, for several reasons we need not advance, could never succeed, yet it was very much in vogue in London for a time, and continued a favourite scheme of the celebrated John Hunter. Some

instances did certainly succeed so far, and, indeed, we now and then see teeth, that have been replaced whence they were drawn, grow quite firm again; but repeated failures after a full trial of this method, and the occurrence of some cases of frightful disease, brought professional men to view the matter aright, and to abolish the practice for ever. Dr. Mason Good, when writing on this same subject, observes: "The grand lesson to be learnt from the preceding case of constitutional disease, on the present occasion, is that of the wariest caution, and a caution amounting almost to a prohibition, in remedying a deficiency of teeth by transplantation."..... "The cases of mischief have been so severe and numerous, that the practice has long fallen into great disrepute, and is now seldom ventured upon."

Able dentists of the present time, in making artificial teeth secure in the mouth, trust rather to an exact general arrangement, than to the strength of any particular fixture. Numerous

improvements have been effected by them in the firm adaptation of the substitutes. They do not limit themselves to any particular method, but consider what sort of arrangement is best suited for the ever-varying cases that come before them.

Here, a fair opportunity occurs of remarking, that a few dentists, and we hope they are only a few, change particular points of their practice every three or four years, with a view to give novelty to it; thereby taking advantage of the public rage for fashion and change, in order to keep up a press of business. While no objection can stand against the solid argument of improvement, it should against a change for such an object. What has been recommended and adopted at one time, is dis-approved and rejected the next; and, after all, the novelty chiefly consists in the sub-stitution of one old mode of practice for another.

Tying them in, as formerly, with thread of any kind, is almost wholly abandoned.

Pivotted teeth are occasionally used. Elastic wire springs, or slender clasps, are the only fixtures by which artificial teeth are fastened to those firm in the jaw.



Here is a representation of four artificial teeth, with the elastic springs by which they embrace the teeth firm in the jaw, and are kept solidly in place. Four natural teeth are set in a socket of hippopotamus' tusk, which forms the artificial gum.

The two figures underneath are sections of the teeth, showing how they are shaped in order to be set into the socket, to which they are afterwards fixed by metal pivots.

Certain artists make a practice of crushing artificial pieces into the gaps in the denture by means of wooden points projecting from their sides that press upon the solid teeth. What instances we have seen of this plan convince us it is unskilful, unsatisfactory, and mischievous in its effects.

It is occasionally announced to the world that artificial teeth are securely adapted, even from a single one to a full set, without ligatures, springs, or fixtures of any sort whatsoever. The accomplished parties who profess so much, give us to understand that all this is effected by capillary attraction and atmospheric pressure. Capillary attraction, however, is an expression altogether unmeaning in this application, but yet finely fitted for puzzling and deluding the ignorant and credulous. Though atmospheric pressure is a much less objectionable term, yet it also is applied to an extent quite unwarrantable.

When the upper jaw is wholly toothless, the artificial denture that repairs the loss

adheres either by suction, which implies that a vacuum is formed, or by the pressure of an elastic spiral spring that is connected to the under denture in one way or another. This suction, more properly vacuum, is explained by referring to a simple and familiar illustration. The boy claps a piece of thick leather well moistened to a large stone, and presses the sucker well that it may stick still closer to it. He pulls the stone fearlessly along, until the leather growing dry and contracting, the air again gets between and destroys the cohesion. Here, the simple explanation is, that air being excluded, the pressure of the atmosphere keeps the leather and stone so close together that they cannot be separated without some force, or the occurrence above alluded to. Adhesion of a full upper denture by suction does not take place in every instance, whatever be the materials of which it is fabricated. Sockets of hippopotamus' tusk are more likely to adhere in this way than plates of gold, platinum, or silver, because

the surface of the former softens in the mouth. An entire artificial upper and under denture are kept in place either by suction or spiral springs.

The preceding account of the methods for fixing artificial substitutes in the mouth, is both interesting as a historical branch of the dentist's art, and useful besides, as supplying many with that information wanted in their transactions with the dentist, where much expense and comfort are at stake.

The time for which artificial teeth may last depends on the nature of the juices in the mouth, the care taken of them, and the kind of materials employed. In refined life the expense of wearing them is a serious item, and should make you in a manifold degree more careful of those that grow in the head. Let every sort of attention be paid to the state of the mouth and to cleanliness, as artificial teeth, by collecting food about them, very soon pollute the breath, and quite spoil the toilette of the mouth. Were it possible,

they ought to be removed from the mouth after every time of eating, for the purpose of being cleansed. At least remove them as often as you can; brush them with Castile soap and warm water, and rub off the dark spots upon the teeth themselves with some mineral tooth powder. When out of the mouth, they should be laid between damp pieces of sponge or cloth.

ARTIFICIAL PALATE.

As may easily be supposed, the fabrication and adaptation of artificial palates soon fell into the hands of the dentist. Unfortunately, the natural palate, both in its structure and functions, comes in, like every other part of the system, for its share in the common accidents of life. Art has tried to remedy them, as well as most other things falling within the reach of human hands. These contrivances of ingenuity, intended to repair deficiencies of the palate, were once named obturators, from

blocking up the openings ; but artificial palate has now become their general designation.

The subject is an uncommon one for a popular writer in this country, though satisfactory information about it has long been very much wanted by persons scattered up and down society. Even by *scientific men* here, it has been neglected, receiving only a limited and unavailable share of attention. It is otherwise on the continent. Many useful articles have been published there on artificial palate, not only communicating all that is known, but fitted to direct to further improvement in the manufacture and adaptation of such an apparatus.

In the personal economy of an individual in health, who has lost the palate, nothing forces itself more upon the attention than the necessity of remedying this deficiency, nothing obtains a more studiously appointed place in the arrangements of the toilette. All this is essential to one's comfort in society, and to escape the several notable *desagréments* con-

nected with the misfortune. Black decayed teeth, the oddity of gaps in the very front of the denture, and the mumping of an edentulous person, are trifles compared with them. Independent of all other reasons, one's own immediate personal comfort requires that the deficiency be supplied by some well-adjusted substitute, and that, if possible, it be so fixed as to admit of being easily removed and replaced. From professional information reaching us in various ways, we find that very many persons, old and young, of both sexes, are in the predicament alluded to above. To them, unable to obtain from books what is appropriate to their situation, and prevented by the delicacy of the affair from seeking advice, we shall convey as much information, in a popular form, as the subject will allow.

That part on the inside of the mouth, about an inch above the teeth, which we press with the point of the tongue in swallowing, is called the palate; and all above, from its resemblance to an arch, the palatine vault,—or, in

common language, the roof of the mouth. Seldom do deficiencies occur in that spot which we may designate the palate proper. The roof of the mouth is formed by the upper jaw and the palate bones. The latter are innermost, and form a portion of the nasal passages, or openings from the nose into the mouth. On looking at the roof of the mouth, we see the shining membrane that covers the bones stretching like a curtain to either side, with an oval fleshy body in the middle, drooping down towards the tongue. Uvula is the name assigned to this oval fleshy body, because supposed to resemble a grape on its stalk. The curtain, with the uvula, are called the appendages of the palate.

The office of the palate is twofold: first, to assist in swallowing; and, second, to modify the voice. In the act of swallowing, the appendages being drawn *backwards* and *upwards*, so completely close up the nasal passages, that the smallest particle cannot pass that way. By the entireness of the palate all

round, and by the complete adaptation of the uvula to its purpose, the food is directed at once into the gullet, and prevented from regurgitating into the nose. Our power to drink continuously, without the fluid running into the same quarter, likewise depends on the perfect arrangement of these parts. Exactly in proportion as the palate is injured, are we unable to swallow easily, and to prevent the unpleasant affair of the food and drink passing into the nasal passages and coming out at the nostrils.

The full and agreeable intonation of the voice is changed and impaired by any imperfection of the palate or its appendages. We have observed that loss of a small portion of the uvula will cause an evident change or alteration in the voice. The person who has met with an accident of this kind, is said "to speak through his nose." Probably, this effect happens by a greater quantity of air passing through the nose than when the uvula is entire. If there be a large opening in the roof

of the mouth, where the sound reverberates, then the natural tone of the voice is destroyed, and enunciation becomes quite indistinct.—When an individual has been born with a great deficiency of the palate, or if this misfortune happen in early life, from any cause, the features appear distorted, especially in speaking, from a constant attempt having been made to close the nostrils, in order to force the air necessary for enunciation through the mouth. In this effort, the muscles of the nose and upper lip are brought too much into play, and it being often repeated, distortion difficult to remove is the certain consequence.

Deficiency of the palate is of various shapes, is different in situations, and happens in several ways. Sometimes it is a small circular opening in the very top of the palatine arch; sometimes it is a large oval hole; and at other times the palate is divided in its whole length, as if it had been cleft from behind forward, and hence is called the cleft palate. Cases have been seen in which this cleft extended

through the palate proper, the dentary arch, and the lip. Again, the whole, or part only, of the palatine appendages may be wanting.

Children are occasionally born without the palate ; at times it is more or less destroyed in early life by scrofula ; and when deficiency occurs in grown persons, it happens either by a wound or ulceration. The congenital deficiency generally has the appearance of a narrow slit ; in which case the divided appendages hang pendulous in the mouth, without the power to execute any part of their office. Harelip is combined with this deficiency alone. If disease have caused the loss, not only may there be a small hole in the roof of the mouth, not only may the appendages be, as it were, partially or altogether consumed, but the whole of the bony and fleshy portions of the palate be destroyed. In this destruction, some of the teeth, with their sockets, may be involved ; and instances have been met with, where the upper teeth, and all belonging to them, have been annihilated along with the

palate. Should ulceration attack the uvula, it seldom stops till the whole is consumed, unless an operation be performed.

Both surgical and mechanical means have been employed to remedy deficiencies of the palate. We would premise, and have it to be distinctly understood in the outset of our observations on the means in question, that the maladies causing the deficiencies alluded to are much too serious to require anything short of the best medical care and advice. One M. Roux, a surgeon at Paris, is the most distinguished of those who have tried to restore the entireness and uses of the palate by surgical plans. He operated by pairing the edges of the opening or cleft, and, having pushed gold pins through the fleshy substance on either side, twisted thread round them so as to draw the edges together. The paired edges were expected to sprout, and, gradually approaching, at length to unite. Some of his operations were astonishingly successful. That many of them should be unsuccessful, is not

to be wondered at, when we bear in mind that the thin fleshy substance covering the palate bones is extremely ill suited for the purposes of a surgical operation, particularly when the deficiency is wide. The surgeon attempts a cure by operating on the fleshy parts only.

It is a singular fact, that no mention is made of the mechanical means of filling up deficiencies of the palate, by any medical author, until the middle of the sixteenth century. Shortly after the subject had been brought before public notice, Ambrose Paré, the restorer of surgery, in the same century, described and engraved two metal obturators, or artificial palates, which were for a long time the only ones employed. In treating of this subject he says: "Sometimes a portion of the pallet bone is broken to pieces, and carried away by balls from fire-arms, or grows carious from disease, whence follows the difficulty of pronouncing so as to be understood. Art has discovered the means of remedying this acci-

dent. For this purpose we apply a gold or silver plate, larger than the hole in the palate, of an arched form, of a middling thickness, and having on the surface next the nose two blades about the eighth of an inch long: a sponge nearly the size of the opening is placed between the blades. The instrument being placed, the moisture immediately makes the sponge swell, which then presses every part of the hole, and thereby keeps up the plate. I have often employed this obturator with success." The other obturator constructed by him is composed of a plate, like the preceding, but having on its superior surface a thin oblong plate mounted on a moveable stock, and distant from the former about the thickness of the palate on which it is intended to rest. A screw is seen on the inferior surface of the large plate, which turns the stock on which the small one is fixed, and places the latter transversely to the opening. This obturator, however, suits only in those cases where the opening in the palate is longer than

broad. In placing the instrument, the great diameter of the moveable plate corresponds to the great diameter of the opening, but by a rotatory movement its extremities, being placed transversely, rest on the floor of the nose, and the obturator is thereby kept in place.

Two centuries and a half elapsed before any alteration, deserving the name of an improvement, was made on Paré's obturators. None of the alterations made at any time have been so distinguished in their introduction to use as to be worthy of notice. The great improvement now-a-days consists in the objectionable sponge being laid aside, in the plate for the artificial palate being stamped and exactly adapted to the parts by means of models taken expressly for the purpose, and in the construction being fixed to the teeth by neat mechanical contrivances. Perhaps, to these modern advantages, we should add the moveable uvula that has been fixed to the obturator.

In cases where gaps exist in the denture no

difficulty is felt in fixing the artificial substitute securely in the mouth, but when the whole of the upper jaw teeth are wanting, it is kept in place by elastic spiral springs connected with the under denture. A case once came under our management where the gold plate was so large and heavy, from the extent of surface to be filled up and covered over, and from the weight of the denture fixed upon it, that the spiral springs were ineffectual in holding up the artificial palate closely to the parts about the roof of the mouth, and where we had to avail ourselves of whatever means were afforded for assisting their action. As the plate was very concave, small rings were conveniently attached to the convex side of it, and, projecting backward, rested on the innermost portion of the palatine arch, still remaining, though extremely narrow. With these rings fastened on, some care was necessary in placing the apparatus; but by their assistance the artificial palate was kept completely in its place.



We have inserted here an Artificial Upper and Under Denture, to show their construction, and, at the same time, to give an idea of the method of attaching the Artificial Palate, and of fixing it solidly by means of the denture.

The upper figure represents the Grinders formed out of the Hippopotamus' tusk, and the Sockets prepared for the upper Teeth, with the holes in the centre of each to receive the pivots, which are screwed into the teeth, and by which they are firmly rivetted.

The lower one shows how the Teeth are prepared for being planted into the basis of Hippopotamus' tusk.

To the upper denture, at its innermost edge, the Artificial Palate is attached, after being formed to the shape of the parts involved. Should elastic spiral springs be neces-

sary to support the Palate, they are fixed to the middle of each side, next the cheek, of the Upper and Under Denture. The springs are bent when the mouth is closed, but their action is, on the opening of it, to become straight again, whereby they afford the needed support.

Silver, platinum, and gold, are the metals used for manufacturing artificial palates. When the tusk of the hippopotamus, or any other kind of bone, is selected for this purpose, it is, after being adapted to the model of the parts, carefully sculptured out to suit the mouth. Of this substance a light and close fitting palate is made. It is objectionable, however, because the bone spoils in the mouth. Various other things have been employed both by persons in and out of the profession, for filling up the openings in the roof of the mouth, such as pieces of sponge, chamois leather, India rubber, and dough; but these, though useful as a temporary means until a proper and permanent substitute can be procured, are unsuitable on many grounds. First, they press unequally on the parts where they rest; second, they protrude more or less into the

nostrils ; third, the effort to displace them sometimes irritates the circumference of the palatine opening ; and, fourth, they become offensive when saturated with saliva, and covered with the nasal mucus.

The perfect adaptation of an obturator in the large deficiencies of the palate is a considerable trial of skill, for much difficulty may be met with in obtaining an exact impression of the spot in wax, from the retching apt to come on by fitting the construction to the parts about the top of the throat, and in so adjusting it as not to obstruct the breathing or hearing of the patient. The following case will illustrate one or two of these points. An individual in humble life once came under our notice who had lost the appendages of the palate by ulceration. He spoke so ill, and the regurgitation of the food into the nose when swallowing, was so disagreeable, that an artist had been employed to fill up the nasal passages with a bone obturator. It obviated the unpleasant snivelling, and enabled him to

swallow as before; but, on the other hand, prevented hearing, and rendered breathing very laborious to him, especially when asleep. On examination, we found no provision had been made for breathing through the nostrils as naturally: the construction blocked up the passage so tightly that no air could pass through. It was withdrawn from the mouth, two small holes drilled through it, and then replaced. He immediately afterwards breathed with ease, his hearing was at the same time quite restored, and he also discovered that the voice was much improved.

The direct uses of an artificial palate are, first to restore the power of swallowing easily and entirely, and of pronouncing distinctly. It would, perhaps, be going too far to say that such an apparatus is a perfect substitute for the natural one; but yet experience warrants us to assert it bestows a very great degree of comfort and advantage. To become acquainted with the improvement which an individual born with a large deficiency of the

palate feels shortly after a substitute has begun to be worn, impresses with the kind offices of this piece of art in the matter of human enjoyment ; but to observe the effects after custom has made him familiar with its use, fully convinces us of its fitness for the end in view. Though it be highly desirable, for several reasons, early to supply children having lost the natural palate with an artificial one, yet it is not advisable until the mouth be nearly full formed, and the permanent teeth have taken such a position as to afford secure resting points for the apparatus.

CHAPTER VII.

To Mothers.

ON THE MANAGEMENT OF CHILDREN DURING THE FIRST DENTITION.

IN a previous chapter we merely adverted to the milk set of teeth, but, here, we devote a special one to the consideration of the management proper for children during the process of the first dentition, concerning which our remarks shall be simple, safe, and strictly practical. The period in which this process takes place is critical, and often full of danger to the child, while, at the same time, it abundantly exercises the care and solicitude of the devoted and watchful mother. Scarcely has the tender being been ushered into the family circle, where it creates an interest peculiar for itself that is unceasingly attentive

to its entire comfort, when Nature appoints it to undergo a change which, though curious and beautiful from the arrangement and effect of the organs in operation, yet seriously tries the health of the little patient. In a few months the child becomes restless, fretful, and, at times, without any apparent cause, cries as if very much pained ; the saliva flows profusely, from the salivary glands sharing in the irritation existing in the jaws ; it grows pale, is feverish at night, sleeps ill, and the flesh gets soft ; the gum over the part where the coming teeth are to protrude is swollen and red ; it chews its fingers, or whatever it gets into hand, for relief to the irritated gum ; and bowel complaint shortly precedes the appearance of the teeth. If the child be healthy, carefully dieted, and well managed, the first dentition is usually got over easy enough. 'Twould be strange were it otherwise ; for, teething is an ordinary function governed by those appropriate laws which Nature always institutes for the accomplish-

ment of her wise and beneficent designs. People, somehow, are apt to fall into the idea that in the operations of the human system, order is the exception, and irregularity the rule. But such an impression in any degree upon the mind of any portion of the public, can only be ascribed to interested parties. Regarding the first dentition, an eminent physician and writer of the present day says: "It has long been observed, that when an infant is in perfect health, it does not suffer from dentition or ablactation. We should except this from physiology, as it would be incompatible with the course of nature, that infants should suffer from teething or weaning, which are natural processes. But when infants are improperly managed, when subjected to repeated errors in diet, clothing, cleanliness, &c., they suffer severely, and are often destroyed during the above conditions. If dentition occur as a natural function, and weaning be well managed, an infant escapes many diseases, he passes through childhood, puberty, and ado-

lescence, with a good constitution, and arrives at a vigorous manhood and a healthful old age."

At a very early stage of fœtal life the germs of the temporary teeth, twenty in number, are to be seen, and at birth their growth is far advanced. In a groove winding along the edge of the jaw bones certain little bodies, round and soft, are ranged, which on examination are each found to consist of blood vessels and nerves contained in a thin membranous sac filled with limpid fluid. These are the apparatus whereby the vital power forms and fully elaborates the teeth. Around the upper surface of the pulps the bony part of the teeth is formed, layer by layer, in a direction from the edge of the crown to the point of the root. As soon as the crown of a tooth is shaped, the enamel is gradually deposited on it by means of the surrounding sac and the fluid it contains. The enamel, when first deposited, is really a layer of minute, rough, opaque white particles, but afterwards

assumes that crystalline appearance which forms the brilliant and adamantine covering of the teeth in the mouth. From the membranous sacs and the little pulpy substances enclosed in them shoots are sent inward, which lodge in a niche in the jaw, and these at length becoming exact duplicates of the former, serve for the production of so many of the permanent or adult set of teeth. The first permanent grinder sends a shoot backward to form the second, and the latter in turn supplies one for the production of the wisdom tooth. What more curious than the complete elaboration of these little organs—the teeth, within the gums, by Nature's own hand, and their exact arrangement in the dentary circle. By an inexplicable law, to which, in this respect, there are several analogous in the human system, they rise up and emerge out of the gums at certain periods, in an appointed order. It is wonderful, when duly considered, that they should, without any evident cause, move slowly outwards ;

but still more wonderful that their progress should stop exactly when the whole crown of the tooth is outside of the gums. Nothing else but this occurrence being so ordinary could render us unobservant of the beauty and felicity of the design.

The subjoined table will show the order, and time, of the milk teeth protruding into the mouth.

Months after Birth.

The two central cutting teeth of the under and upper jaw,	from 6 to 8
The two lateral cutting teeth of the under and upper jaw,	— 7 — 10
The two anterior grinding teeth of the under and upper jaw,	— 12 — 14
The two canine or eye-teeth of the under and upper jaw,	— 15 — 20
The two posterior grinding teeth of the under and upper jaw,	— 20 — 30

Dentition commonly begins in the under jaw, and throughout the process all the organs belonging to this part precede those to the upper. Much irregularity, however, prevails in the order and time of teething, as we shall

show by a few examples further on. Some infants are born with teeth, as is amply attested in the annals of medicine. It is a fact recorded in history, that Louis XIV. had four cutting teeth at birth. Such precocious organs should always be removed, if giving pain to the individual nursing. Sometimes it happens they have very little root, and are therefore easily and safely taken away. On the contrary, the milk teeth are occasionally extremely late in their appearance, and individuals are mentioned by writers on such subjects, who have never had any teeth, even at a late period of life.

To exhibit the irregularity occurring in ordinary instances, we insert tables of the teething of four healthy children, who came immediately under our own notice. We shall take occasion, at the same time, to introduce our observations on the management proper during the first dentition, by stating the attending symptoms, and the simple treatment followed in their cases.

FIRST.

Month after Birth.

- The two central cutting teeth of the under jaw, 5th.
 The two central and lateral cutting teeth of the
 upper jaw, 7th.
 A lateral cutting tooth of the under jaw, 8th.
 The two anterior grinding teeth of the under
 jaw, 12th.
 The two anterior grinding teeth of the upper
 jaw, 13th.
 A lateral cutting tooth of the under jaw, 15th.
 The two eye-teeth of the under and upper jaw, 16th to 18th.
 The two posterior grinding teeth of the under
 and upper jaw, 22d to 24th.

Severe bowel complaint and great debility accompanied teething in the fifth month, but by removal of the child to the country these symptoms were gradually moderated, and at length entirely remedied. Good health was enjoyed during the rest of this process; nor did any effects of dentition become so marked as to require particular mention. Though about the sixteenth month excessive diarrhœa and debility again occurred, yet these were rather to be ascribed to a bad epidemic at that time raging in the country.

SECOND.

Month after Birth.

The two central cutting teeth of under and upper jaw,	6th to 7th.
The two lateral cutting teeth of under and upper jaw,	9th to 10th.
The two anterior grinding teeth of under and upper jaw,	14th.
The two eye-teeth of under and upper jaw, ..	18th.
The two posterior grinding teeth of under and upper jaw,	24th to 26th.

In this instance, where there is a close approximation to the natural time and order, and where every thing, too, was sedulously avoided, that might lead to general disorder of the system, fever and other constitutional symptoms were extremely moderate.

Bowel complaint followed the protrusion of the first teeth. Change of air, as well as strict attention to diet, were attended with their usual salutary effects. The state of the health afterwards, as far as regards teething, affords no ground for remark.

THIRD.

Month after Birth.

- The two central cutting teeth of under jaw... 8th to 10th.
 The two lateral cutting teeth of upper jaw, .. 10th.
 The left central cutting tooth of upper jaw, .. 11th.
 The two lateral cutting teeth of under jaw, .. 12th to 13th.
 The two anterior grinding teeth of under and
 upper jaw, 14th to 16th.
 The right central cutting tooth of upper jaw, 18th.
 The two eye-teeth of under and upper jaw... 19th to 21st.
 The two posterior grinding teeth of under
 and upper jaw..... 24th to 30th.

Much irritation in the gums, causing restlessness and tossing about in sleep. When the under lateral cutting teeth had protruded, and the anterior grinders of upper and under jaw were advancing, the child being then in the country, bad bowel complaint came on, which was immediately checked, and prevented from running to a dangerous extent by strict attention to diet, and the exhibition of one or two simple medicines. While the diet was of boiled milk, flour of rice, and so forth, and while care was taken that the child might

not taste any vegetable whatever, minute rhubarb powders were given in the morning, and doses of laudanum consisting of three drops daily administered. Satisfactory effects soon followed, and the child passed through the remaining stages of dentition in perfect safety.

FOURTH.

Month after Birth.

- The left central cutting tooth of upper jaw, .. 6th.
- The right central cutting tooth of upper jaw, 10th.
- The right central cutting tooth of under jaw, 10th.
- The left central cutting tooth of under jaw,.. 13th.
- The lateral cutting teeth of upper jaw,..... 13th.
- The two anterior grinding teeth of under and
upper jaw, 15th to 16th.
- The lateral cutting teeth of under jaw,..... 15th to 16th.
- The two eye-teeth of under and upper jaw, 20th to 22d.
- The two posterior grinding teeth of under and
upper jaw, 27th to 31st.

Though the order of the teeth coming into the mouth were so irregular, yet the health, generally, continued good. Earache seemed to annoy the child when getting the posterior grinding teeth, and particularly after being an

hour or two in bed. This was relieved by sponging the parts about the ear with a mixture of spirits and vinegar at night, and by senna taken in the morning.

In the alterations of health occurring in these different cases medicine was seldom resorted to, and when necessary the very simplest kind preferred. For ordinary feverishness, debility, bowel complaint, restlessness in sleep, nervous affections, and pain, being much in the open air, rigid attention to diet, minute tonic powders, the tepid bath, and the mildest laxatives, were found amply sufficient. Removal to the country not only had the most salutary influence on the general health, but enabled them to pass easily over the critical stages of dentition. If a child's health seemed to change at any time, this was at once attended to, care was taken to moderate the progress of every complaint; and, when a doubt happened as to what might be the matter, the opinion and direction of the family surgeon were immediately obtained. Scarifi-

cation we never once admitted into our list of remedies, though from the tables it is manifest the illness of the children at any time might have justified one of a different way of thinking in ascribing it to the irregular teething, because directly contrary to our views of the practice suited for the first dentition. Like others, we have heard of the advantages of scarification, but, nevertheless, would strongly recommend such *hygiene* as renders a trial of them quite unnecessary.

The influence of the first dentition on the constitution is frequently combined with other complaints which, mutually reacting on each other, occasion much distress and danger to the child. Various are the symptoms that follow such a complication—high fever, severe diarrhœa, rapid wasting, inflammation of the brain, convulsions; and should these be overlooked or disregarded, diseases take hold of the system, which no care nor medicine can remove. It is easy to explain the cause or reason of such an effect. Every part of the

body is connected by nerves: the irritation of a single branch will not only in the first place derange the branches arising from the same trunk, but the whole nerves of the body; and as all the functions depend on nervous influence derived from one common centre—the brain, consequently every function in the animal economy may at length be involved. Thus toothache in the adult will cause loss of sleep and appetite, derangement of the bowels and senses; or living in a damp situation, decay and loss of the teeth; or injury of the thumb, locked-jaw; or a slight wound, rigid spasm of every muscle of the body. But, whether a serious complaint have been induced by teething, or be merely complicated with it, no judicious mother should ever attempt to manage the case without the opinion and superintendence of a medical adviser.

Of all the ills to which the dear little creatures are exposed during the process of the first dentition, none are near so numerous

as those arising from the thoughtlessness and ignorance of the parties to whom Providence has intrusted them for a season. Probably almost all the little ailments of children, at this period, are due to inconsiderate changes in the mother's diet while nursing, to improper aliment after weaning, or to want of affectionate watchfulness in the persons employed to take care of them. The slightest change in the diet of the nurse, may produce a considerable one in the health of the child, and, hence, the tender little being that was all health in the morning, we have seen on the succeeding night in a high fever, or ill of alarming nervous excitement. If those variations in health, that indicate it is suffering from some cause or another, be disregarded, such symptoms may follow, as shall not only alarm you, but be extremely difficult of removal. No wonder it should be so; for, the infant frame is so tender, and the constitutional excitement at this stage of life so great from the egress of the teeth, and from

many important organs in course of being matured, that it is highly susceptible of every impression. The energetic vitality of the brain, for instance, appears in the constant and active exercise of the organs of sense, in the acuteness of the sensations, in the immediate influence of the digestive organs upon it, and in the strong nervous disorders it so readily excites. Again, you have observed the excitable state of the digestive organs, in the rapidity of digestion, and in the perpetual desire for aliment. From all this we are led to conclude, that the greatest care is necessary in selecting aliment for children, as the ingestion of improper articles will quickly create irritation and inflammation of the bowels, colic, diarrhœa, and so forth. 'Twould be folly to overlook the corollary, which is, that the use of improper food is one of the commonest exciting causes of infantile diseases.

The rational and judicious management of children during dentition, requires close attention. The prophylactic treatment, styled by

the French *hygiene*, or that which instructs to guard the health and prevent disease, must be modified according to constitution and symptoms. While the quantity and quality of the aliment should be regulated, the physical management as to clothing, exercise, and bathing, should be duly attended to, and the bowels kept in order.

“As to the secrets of empirics,” observes a shrewd and learned physician, “anodyne necklaces, vegetable syrups, and so forth, for facilitating dentition, as well as all superstitious remedies, they are, I need not say, useless and absurd. In many instances, mothers and nurses overfeed children, as they generally imagine they cannot give too much. The stomach is pained by improper food, more especially if, over-distended, irritation is excited, and nature expels the offending cause by vomiting. During and after vomiting the child is in pain,—it cries or screams, it is said to be hungry, and it is again overfed until it vomits. The stomach becomes more irritable

by repeated excitement, the infant screams incessantly, and now the nurse displays her skill by exhibiting some cordial or soothing syrup. diaeodium or syrup of poppies, Godfrey's eordial, Dalby's carminative, syrup of soot, syrup of violets, oil of aniseed, or some ardent spirit. Every one of these is highly improper, and increases the irritation to such a degree that the unfortunate little sufferer screams incessantly, and is at length relieved by the judicious treatment of a medical practitioner."

Milk alone is the proper food for children until part of the teeth have protruded. It often happens they will pine on all other aliments. Nature furnishes in most cases the appropriate nourishment, and every deviation from it is a violation of her dictates, an encroachment on her limits. If the mother's milk fail or be deteriorated, her place ought to be supplied by another woman, or by the milk of an animal. The milk of the reindeer in Lapland, the mare in Tartary, the wild goat or the dromedary in Syria, the lama

or Peruvian sheep in South America, and the cow, the goat, and the ass in Europe, supply the inhabitants of those several countries with abundance of wholesome nutriment. In this country, new cow's milk is most used either alone, or when its component parts have been separated, or by being mixed with a fifth part of hot water and a small piece of lump sugar. The fresher the milk from the cow, the more laxative its qualities; and brown sugar is more aperient than white. But, should it, when it is the only article of diet, disorder the stomach and bowels, magnesia or prepared chalk, in small quantities, is usually administered as an antacid. In many cases, ass' milk is preferred to that of the cow: it approaches nearest to human milk, and, thence, is strongly recommended for delicate children.

The diet of the mother while nursing, should be simple, regular, and as uniform as possible; indeed, the whole course of living should be regulated by what is best for the

welfare of the child during dentition. The same remarks will equally apply to the individual employed as nurse. By the tranquil mode of life, and by the plain, as well as uniform, diet of common people in the country, their children are exempt from many of those things that are the bane of the health of children brought up in a luxurious and artificial state of society. If any kind of food, simple though it be, or any circumstance in the style of life, is found to aggravate the ordinary effects of teething, the same ought to be resolutely avoided. No mother, it is presumed, can for a moment flatter herself into the belief that it is a matter of self-denial to discontinue what is seen to have an injurious influence on her offspring in any degree. Is it not her imperative duty? A negative, even in thought, to this inquiry, on any pretext, would show she was at fault in the amount of maternal feeling, and a refusal to acquiesce demonstrate that Nature had failed to impart her laws to that mother's under-

standing. The sentiment that animated the poet's breast should constantly dwell in hers :

“ Hail, to this teeming stage of strife !
Hail, lovely miniature of life !
Pilgrim of many tales untold !
Lamb of the world's extended fold !
Fountain of hopes, and doubts, and fears,
Sweet promise of eestatic years !
How would I fainly bend the knee,
And turn idolater to thee.
'Tis Nature worship, felt—confess'd
Far as the life-blood warms the breast.”

The diet and medicine taken by a nurse will affect the breast milk, and, through it, the child. The mother, therefore, must be cautious in the quality of her aliment, especially, in the medicine she selects. Whatever opiates have to be taken by herself, must be carefully watched as to their effect on the child. It has been affirmed, “most women err in supposing that they, while nursing, require more food than at other times.” This, to say the least, seems a very questionable assertion. On this, as on all other occasions, the appetite of the party con-

cerned, will be thought the best rule. Let her take food to satiety, but not to excess. She should prudently and permanently prefer for her bill of fare those flesh meats which are most nutritious, with a moderate *mélange* of vegetables, and mild drinks. She may discard, as a general rule, salted, smoked, and high seasoned meats, fish of many kinds, perhaps of all, and cheese. Whatever agrees with the mother, and is easily digested, may be considered so far suitable for the child. Wines, ale, porter, and spirituous liquors, are dangerous. Broths, and plain soups, are not. Tea, coffee, and chocolate, are certainly best when weak. It is generally thought that porter increases the breast milk, and, hence, the custom among women of the middle and lower classes of taking a quantity of it daily. Yet, every description of malt liquor, not of home manufacture, is, we have room to suspect, so much impregnated and adulterated with narcotic ingredients, that it vitiates the milk, and of course the constitution of the

child reared on it. The children of those who indulge in spirituous liquors are often destroyed by convulsions during teething.

The nursing mother should shun without reluctance theatres, crowded assemblies, balls, and all frivolities, as her child cannot safely be deprived of its natural food for several hours, nor properly dieted by any other sort of nourishment. The singular fact that a child will take cold from the nurse, shouts a *prenez garde* to the fashionable mother. We are not surprised to hear that strong passions of the mind reduce the quantity and quality of the milk. When a child is suckled by one in a fit of rage, it may be suddenly thrown into convulsions. It is of the utmost importance that the maternal bosom be the scene of happy tranquillity, sacredly guarded from fear, melancholy, envy, grief, jealousy, shame.

To promote health and a wholesome milk, the mother ought to take moderate exercise in the open air or at home. The milk of a

nurse very warm with exercise is extremely hurtful, consequently, the child should not be suckled on any account while she is in this state. Let not the sleep be too long or too short; from seven to nine hours is sufficient in the majority of instances. Too soft a bed is considered prejudicial to health.

Next in point of importance to maternal solicitude, as regards the welfare of children during dentition, is the affectionate and untiring attention of the individual employed to take care of them. Such an individual should always possess experience in the management proper for them, and feel a sincere anxiety for their comfort. Her business is not merely to watch over them by day, but to be attentive, as much as circumstances admit, to every alteration their health has undergone during night, and to communicate to the mother every indication of illness that may have appeared, whatever be the trouble it may occasion to herself. As to a hired nurse, you cannot surely expect she will perseveringly fulfil her

duties to the foster-child with zeal and humanity, unless she feel an attachment for it, and a pleasure in the charge she has undertaken. Every precaution, then, should be taken to secure the services of one whose habits and dispositions are of the best sort. The health, and every thing in future life connected with the health, of the tender being entrusted to the foster-mother, depend upon her kindness and fidelity, and for these we feel she is morally responsible. If the child decline under her care, and she cannot explain it as the effect of dentition or disease, she ought to be discharged, and another selected.

The eruption of the first teeth is the signal for a change in the child's diet. As soon as the jaws have been armed with some of them, a different aliment becomes necessary. Milk may be given with farinaceous substances, such as oatmeal, bread, arrow root, sago, rice, biscuit; and likewise broth, or diluted gravy without fat, mixed with bread or the mealy part of potato. About this age, weak soups,

chicken broth, beef tea, and light puddings made of bread, tapioca, rice, arrow root, are considered proper food for children. "The gravy of beef or mutton not over-roasted, and without fat, properly diluted with water, is the most wholesome and most natural, as well as the most nourishing broth that can be made." This is the opinion of an eminent physician.

It is evidently preposterous to give animal food in pieces to toothless children, yet the contrary is a common enough practice. Even toothless adults, unless furnished with artificial teeth to chew with, acknowledge it disagrees with their digestion. Nature declares this sort of aliment improper, however well minced, until part, at least, of those organs are in the mouth, which she appoints for mastication. No doubt children have a great liking for it, but this is no rule in the case. This food cannot be well digested by the weak stomach of a child; it passes into the intestines in a crude condition, and, there

producing serious affections, gives rise in turn to tooth fever, diarrhœa, and remittent fever. Several writers have gone so far as to prohibit it until four years of age, and allow it then only if the child be made to chew it well. "Infancy and childhood," Arbuthnot remarks, "demand thin, copious, nourishing diet."

You scarcely need to be reminded that pastry, and food, high seasoned, salted, or smoked, are highly injurious to the alimentary organs of children. The custom of inducing children to eat by giving sweets and other enticing eatables is quite objectionable, for they are naturally voracious and take too much. Besides, *toothache* and *bad digestion* are directly and inevitably connected. The saliva becomes acid, this destroys the teeth, and then follows exposure of the nerve to all the causes of toothache. Fetid breath is another consequence.

The rapid growth of the body requires frequent supplies of nutriment; and, for this

reason, children should be fed at short intervals. Their repasts should be moderate in quantity, and never refused when wanted. It cannot be thought beneficial to their comfort, health, and strength, to let them remain hungry until the time when the family repasts are taken, if a long interval come between. At table, they should not be allowed with grown persons.

Milk and water is the best drink for children. Every kind of liquor should be contraband to their lips, unless ordered as a medicine. Coffee, chocolate, and tea should be given extremely weak. Whey, which is the thin part of eurdled milk, is an excellent beverage. During illness children will subsist long on milk and water, toast and water, barley water, thin arrow root, or tea.

Being much in the open air is highly beneficial to children in the feverishness common in teething; it removes fretfulness, counteracts debility, and procures refreshing sleep. Notwithstanding, do not expose them to a cold

damp air. Their feet and legs should always be kept warm and dry. If the gums be hot and painful, the head at the same time as it were burning, and there be also much uneasiness, sponging the head all round with a tepid mixture, of two parts vinegar and one part spirit, will moderate the symptoms and dispose to sleep. When the feverishness happens to be greater than usual, the warm bath at bed-time, conjoined with the above, will exert a salutary influence on the health of the little patient. By an undisturbed night's repose thus obtained, we have seen a child in the morning quite revived. A safe medicine acting on the skin will lessen the oppression following from fever; such as six grains of sulphur in the morning, or from five to ten drops of ipecacuan wine in the evening. Both can be taken in a little sweetened water. A mild purgative is likewise a useful adjuvant to the means for allaying feverishness.

To regulate the bowels, it has been already observed, is essential in the prophylactic

treatment. A well informed medical writer observes, "It may be laid down as a general proposition, that a very small number of medicines are employed by the most experienced practitioners in the complaints of early life. The famous Sydenham considered that weakness and acescence of the stomach, were the predisposing causes of the diseases of children; and to correct these, he used two remedies in his practice—infusion of rhubarb and animal volatile salt." Costiveness, or rather simple irregularity of the bowels, may be remedied by small doses of castor oil, magnesia, or cream of tartar, with plenty of diluent drink. If this affection be owing to the nature of the breast milk, as often happens, then the nurse must come under medical treatment. Should the motions become unhealthy during dentition, a tea spoonful and a half of castor oil, with a few drops of oil of aniseed, to prevent griping; or half a tea cupful of weak infusion of senna with coriander seeds; or three grains of rhubarb, six of

calcined magnesia, and two of ginger or any other aromatic, are the safest aperients. The oil is best administered in warmed water sweetened; the senna as tea; the powder in jelly, treacle, sweetened water, or gruel. One dose is generally sufficient, but, otherwise, it may be repeated every six hours until it operate. Mothers are recommended to exclude mercury in all its forms from the list of remedies, on account of the havoc it makes both on the temporary and permanent teeth. At most, let it remain entirely in the hands of judicious medical men.

Colic is a frequent complaint with children. It is produced principally by exposure to cold, or by irregularities in the nurse's diet, that affect the milk, or by improper food after weaning. The symptoms are sudden and violent screaming, kicking and drawing up the legs, tenseness of the belly, and sometimes suppression of urine. These may be removed by a larger dose of castor oil than usual, combined with a few drops of the essence of

peppermint, and smart friction of the belly with spirits. If the draught do not act, a clyster composed of two tea spoonsful of castor oil and two ounces of warm gruel, may be given. 'Tis useless to add, that the causes of this disorder must be avoided.

Gumsticks have been spoken of time immemorial, as assisting the cutting of the teeth. The only one we have ever heard of fit to fasten to the girdle of a child for this purpose, was an India-rubber one. Of gumsticks children make very little use. What material service a hard substance, chewed in the manner of a child, can render in the process of dentition, we are rather at a loss to understand. Repeated and long continued friction with the finger of the nurse may soothe irritation of the gums, soften them, and promote absorption or removal of those parts that obstruct the progress of the teeth.

Scarification of the gums is a practice very generally resorted to now-a-days, when children are ill in any degree during teething.

Whatever be the merits of the practice, it is certainly a cruel one, and the screams of her sweet child, on having its gums scored with a lancet, must be disagreeable enough to every mother's mind. It is to be feared, that this scarification is a penalty which the helpless little creature too often pays for the carelessness of the mother or nurse. Were attention paid to all the variations in the child's health at the beginning, and were care taken to avoid every thing in diet or otherwise that might injure, but seldom would it be requisite to plunge the lancet into its gums. Eminent physicians have recommended scarification, and other eminent physicians have opposed it; so that there has been the force of such authority against, as well as for, the utility of the practice. It is allowed, and it is the only argument, by the supporters of scarification, that though it gives relief only at the time, yet the part of the gum cut through, after it has healed again, yields more readily to the pressure of the teeth. This argument does

not pretend, however, even to look into the anatomy and physiology of the parts concerned in dentition, and blindly sets aside all the considerations arising from the supposition that Nature may have appointed some rational and exact means of safely bringing about the protrusion of the teeth. But, if the opinion of certain scientific men, who have given themselves to the express examination and study of this particular subject, be correct, which is, that Nature has established an adequate means whereby the teeth are conducted to the verge of the gum, and assisted in their egress, then the practice is not only cruel, but destructive of the end in view. No one can for a moment imagine, that it was ever intended the function of teething should be completed by the painful application of a cutting instrument. Reasoning beforehand, we must conclude it was much more probable that the wise and benevolent Creator had prepared some suitable and fixed arrangement by which the teeth should gradually emerge from under-

neath the gums without detriment to the child, than that the seed by its shoots should appear in due time above the earth. It would therefore follow that the disorders connected with teething will be best remedied by constitutional treatment, and the relief asserted to have been procured by scarification be obtained by means free from its objections. Our opinion and feelings are quite in unison with the following observations: "When the physical and moral education of the infant have been badly conducted, it is delicate and irritable, and teething becomes productive of serious mischief, and may induce convulsions, diarrhœa, or water in the head. It would be inconsistent with the usual course of nature, that the development of the teeth should be productive of more pain and danger than the growth of any other part of the body; and it would be contrary to the unbounded goodness of divine Providence, that so many tender infants should be doomed by dentition to the severest sufferings, nay, to death itself. The

cause is mismanagement of physical education, and not the intention of the great and beneficent Author of all good."

When the teeth begin to protrude, there is sometimes much inflammation of the gums and suppuration, which make the mouth both painful and offensive. A good thing to cleanse and heal the gums, is a little tincture of kino, or of bark, applied with a camel's hair pencil to the tender parts. Again, we frequently see the whole lining membrane of the gums ulcerated, and those teeth that happen to be in the mouth at the same time getting brown, soft, and rotten. This affection depends on the state of the stomach, and chiefly accompanies debility. While you employ such medicines as are suited to the constitutional derangement, give borax and honey, or brush the gums as above directed with weak solution of sulphate of zinc. The best remedy we have tried is minute powders, of two parts rhubarb and one of bark, laid on the tongue, to be swallowed. They may be given twice or thrice a-day.

From weakness of structure, or, in other words, from the small quantity of earthy matter in their composition, and from being elaborated in a short period, the first teeth are extremely apt to decay. When several of them spoil together, and the gums grow sore, the breath of children is often insupportable. In such a case, the mouth ought to be rinsed regularly after eating, with tepid water alone, or with a little subcarbonate of soda dissolved in it, or mixed with a little port wine, or scented with a few drops of lavender. If the disorder be owing to acidity of the stomach and debility, tonic and astringent powders are indicated, and whatever contributes to health. Should it follow from eating too many sweets, from improper or too much food, these must be absolutely withheld, and purgatives administered.

That laxative state of the bowels which is ordinary during teething, and only sympathetic, should be attended to, and checked if it weaken the child. The effect of it is

supposed to be salutary, and to keep down fever. However, if it have been allowed to go too far, it may very safely be moderated by a diet of rice milk, or other milk aliment, and by minute doses of rhubarb in the morning. But should a diarrhœa or bowel complaint arise from irregularity in food either of the nurse, or of the child after being weaned, this may be corrected by gentle purgatives and avoidance of the injurious cause. When the child unfortunately becomes languid and enfeebled, it must be strengthened by nourishing and stimulating food. The tepid bath and warm clothing should not be neglected.

If teething cause high fever, or much nervous excitement, the tepid bath, leeches behind the ear, or a blister on the back of the neck, and purgatives, become necessary. Sponging the body with an evaporating lotion of vinegar and spirits, will assist to diminish the symptoms. Should convulsions come on, place the child in a warm bath for a few minutes; lay, after removing from the bath,

a cloth wet with spirits, and sprinkled with pepper, on the stomach, and rub the spine with hartshorn. A elyster is to be given at the same time. This treatment must be followed up by purgatives.

Those sudden attacks of spasm about the windpipe, accompanied by a feeling of suffocation and a crowing sound, which sometimes occur during the evolution of the dentary organs, are relieved by the tepid bath, leeches, stimulating friction on the chest, and laxatives.

When a child is suffering, during the process of the first dentition, from any complaint whatsoever, the mother should not on any account allow herself to remain doubtful of the cause, or uncertain of what ought to be done. In such an emergency, the opinion of the family surgeon should be immediately obtained, and his directions punctually followed; for, in every difficulty, it is his business to point out the medicines and treatment appropriate to the case. Nowhere are a medical man's good offices more valuable, than in assisting us safely to

rear, guard, and preserve the tender offspring which an all-wise Providence has introduced to the family circle. If the mother and nurse duly perform their part, and if children's complaints be early brought under the notice of the physician, not only is there reason to expect that their health shall be preserved, but that those diseases, so often striking root during teething, and hurrying off to a premature grave, be effectually counteracted.

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